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MANUAL OF PROPERTIES OF COMBINED BEAM AND PLATE

PART II FLANGED PLATE

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MANUAL OF PROPERTIES OF COMBINED BEAM AND PLATE

PART II FLANGED PLATE

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of Commerce, and the Bureau of Ships, Department of the Navy*

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Foreword

This Manual is the result of the combined efforts of the Maritime Administration, U. S. Department of Commerce; the Bureau of Ships, Department of the Navy; and the Hull Structure Committee (S-12 Panel) of the Society of Naval Architects and Marine Engineers.

The Society of Naval Architects and Marine Engineers coordinated the program, and the computations were made under the direction of the Ship Design Division, Bureau of Ships, Department of the Navy, using the facilities of the David Taylor Model Basin.

This publication was made possible by the Office of Technical Services of the Department of Commerce in conjunction with the Maritime Administration.

While the information contained herein was developed primarily for the use of the shipbuilding industry, it is of value to the structural industry as a whole, when it is desired to take advantage of the weight-saving which results from the elimination of the faying flanges of stiffening members by the welding of webs directly to plating.

Part I covers stiffener and plate combinations using commercially available shapes. Part II covers combinations using flanged plates whose dimensions are beyond those of commercially available angles and channels.

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INTRODUCTION

1. SCOPE:

These tables are intended to be used in the design of ship structure where the plate is considered acting as one of the flanges of the attached member.

2. SHAPES INCLUDED:

a. The flanged plates are made by bending plate with a flanging machine or similar equipment to form an angle of the desired dimensions. Calculations are based upon an inside flange radius equal to the flanged plate thickness.

b. The sizes were chosen after an investigation of present and future needs.

3. EFFECTIVE BREADTH OF PLATING:

The selection of an effective breadth of plating to be assumed to be acting in association with any shape is influenced by the yield strength and the modulus of elasticity of the material. This is calculated by the formula $2 \sqrt{E/F_y} t$ where E is the modulus of elasticity (p.s.i.), F_y is the tensile yield strength (p.s.i.) and t is the thickness (in.) of the plate. If the plating and beams have different yield strengths, the lower value yield strength is used in the formula.

The values for effective breadth of plating have been selected as 60t, 50t, 40t, and 30t. These approximate the actual values of MS (60t), HTS (51t), HY80 (39t) and facilitate interpolation when the spacing between stiffeners is smaller than the effective breadth of the plate.

These tables apply only if the calculated stiffener spacing is equal to or greater than the effective breadth of plating. Where the stiffener spacing is less than an effective breadth of 30t, equivalent plating having the required area can be used by selecting an appropriate thickness. The latter method will result in only a negligible error for most cases.

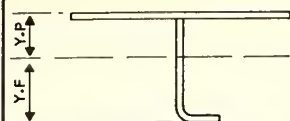
4. SYMBOL NOMENCLATURE AND DEFINITIONS:

Weight per Foot	= Weight per foot of shape only (after it is cut) in pounds per foot.
Section Modulus-- Lesser	= Minimum section modulus in inches cubed (either to the flange or to the plate).
Section Modulus-- Greater	= Maximum section modulus in inches cubed (either to the flange or to the plate).
I	= Inertia of the shape and plate combined in inches to the fourth power.
r	= Radius of gyration of shape and plate combined in inches.
Area	= Area of shape only in inches squared.
Y-F	= Distance, neutral axis to the flange in inches.
Y-P	= Distance, neutral axis to the plate in inches.
Beam Depth	= Depth of beam to the plate in inches.
Flange Width	= Width of flange in inches.
Flange Thickness	= Actual thickness or average thickness for tapered flanges in inches.
Shear Area	= Shear area of shape only (depth of beam times thickness of web) in inches squared.

5. PART I COVERS SIMILAR TABLES FOR CUT I-BEAMS, CHANNELS, AND ANGLES CUT FROM COMMERCIALY AVAILABLE SECTIONS AND ATTACHED TO PLATING.

EFFECTIVE BREADTHS AND EQUIVALENT AREAS

Plate			60 †		50 †		40 †		30 †	
Lbs./Ft. ²	Decimal	Fraction	Breadth	Area	Breadth	Area	Breadth	Area	Breadth	Area
	In.	In.	In.	In. ²	In.	In. ²	In.	In. ²	In.	In. ²
5.1	0.125	1/8	7.50	0.94	6.25	0.78	5.00	0.63	3.75	0.47
6.37	0.1563	5/32	9.37	1.46	7.81	1.22	6.25	0.98	4.69	0.73
7.65	0.1875	3/16	11.25	2.11	9.38	1.76	7.50	1.41	5.63	1.05
8.925	0.2188	7/32	13.12	2.87	10.94	2.39	8.75	1.91	6.56	1.44
10.2	0.25	1/4	15.00	3.75	12.50	3.13	10.00	2.50	7.50	1.88
11.475	0.2813	9/32	16.87	4.75	14.06	3.96	11.25	3.16	8.44	2.37
12.75	0.3125	5/16	18.75	5.86	15.63	4.88	12.50	3.91	9.38	2.93
14.025	0.3438	11/32	20.62	7.09	17.19	5.91	13.75	4.73	10.31	3.54
15.3	0.375	3/8	22.50	8.44	18.75	7.03	15.00	5.63	11.25	4.22
17.85	0.4375	7/16	26.25	11.48	21.88	9.57	17.50	7.66	13.13	5.74
20.4	0.50	1/2	30.00	15.00	25.00	12.50	20.00	10.00	15.00	7.50
22.95	0.5625	9/16	33.75	18.98	28.13	15.82	22.50	12.66	16.88	9.49
25.5	0.625	5/8	37.50	23.44	31.25	19.53	25.00	15.63	18.75	11.72
28.05	0.6875	11/16	41.25	28.36	34.38	23.63	27.50	18.91	20.63	14.18
30.6	0.75	3/4	45.00	33.75	37.50	28.13	30.00	22.50	22.50	16.88
35.7	0.875	7/8	52.50	45.94	43.75	38.28	35.00	30.63	26.25	22.97
40.8	1.00	1.0	60.00	60.00	50.00	50.00	40.00	40.00	30.00	30.00
45.9	1.125	1 1/8	67.50	75.94	56.25	63.28	45.00	50.63	33.75	37.97
51.0	1.25	1 1/4	75.00	93.75	62.50	78.13	50.00	62.50	37.50	46.88
56.1	1.375	1 3/8	82.50	113.44	68.75	94.53	55.00	75.63	41.25	56.72
61.2	1.50	1 1/2	90.00	135.00	75.00	112.50	60.00	90.00	45.00	67.50
71.4	1.75	1 3/4	105.00	183.75	87.50	153.13	70.00	122.50	52.50	91.88
81.6	2.00	2.0	120.00	240.00	100.00	200.00	80.00	160.00	60.00	120.00
91.8	2.25	2 1/4	135.00	303.75	112.50	253.13	90.00	202.50	67.50	151.88
102.0	2.50	2 1/2	150.00	375.00	125.00	312.50	100.00	250.00	75.00	187.50
112.2	2.75	2 3/4	165.00	453.75	137.50	378.13	110.00	302.50	82.50	226.88
122.4	3.00	3.0	180.00	540.00	150.00	450.00	120.00	360.00	90.00	270.00
132.6	3.25	3 1/4	195.00	633.75	162.50	528.13	130.00	422.50	97.50	316.88
142.8	3.50	3 1/2	210.00	735.00	175.00	612.50	140.00	490.00	105.00	367.50



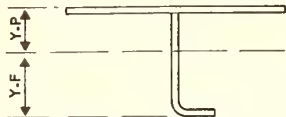
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 18 x 30.6	89.89	121.99	223.78	1,440.88	6.91	6.439	11.811	26.44	13.50
25.5	75.17	111.96	194.09	1,295.79	7.08	6.676	11.574	22.11	11.25
20.4	60.35	101.77	162.38	1,141.76	7.29	7.031	11.219	17.75	9.00
15.3	45.42	91.43	128.23	974.04	7.55	7.596	10.654	13.36	6.75
18 x 16 x 30.6	84.79	120.30	204.67	1,382.77	6.94	6.756	11.494	24.94	13.50
25.5	70.92	110.44	177.52	1,242.55	7.11	6.999	11.251	20.86	11.25
20.4	56.95	100.43	148.53	1,093.51	7.30	7.362	10.888	16.75	9.00
15.3	42.87	90.26	117.31	930.98	7.54	7.936	10.314	12.61	6.75
18 x 14 x 30.6	79.69	118.31	185.46	1,318.25	6.96	7.108	11.142	23.44	13.50
25.5	66.67	108.66	160.88	1,183.63	7.12	7.357	10.893	19.61	11.25
20.4	53.55	98.86	134.64	1,040.32	7.30	7.727	10.523	15.75	9.00
15.3	40.32	88.89	106.38	883.78	7.52	8.308	9.942	11.86	6.75
18 x 12 x 30.6	74.59	115.94	166.14	1,246.21	6.97	7.501	10.749	21.94	13.50
25.5	62.42	106.54	144.16	1,118.04	7.11	7.756	10.494	18.36	11.25
20.4	50.15	96.98	120.70	981.37	7.28	8.131	10.119	14.75	9.00
15.3	37.77	87.27	95.41	831.82	7.48	8.718	9.532	11.11	6.75
18 x 10 x 30.6	69.49	113.05	146.70	1,165.25	6.94	7.943	10.307	20.44	13.50
25.5	58.17	103.96	127.37	1,044.60	7.08	8.202	10.048	17.11	11.25
20.4	46.75	94.71	106.71	915.69	7.23	8.581	9.669	13.75	9.00
15.3	35.22	84.43	85.29	774.33	7.41	9.171	9.079	10.36	6.75
18 x 8 x 30.6	64.39	109.48	127.15	1,073.58	6.88	8.443	9.807	18.94	13.50
25.5	53.92	100.76	110.50	961.80	7.00	8.704	9.546	15.86	11.25
20.4	43.35	91.89	92.67	842.06	7.14	9.086	9.164	12.75	9.00
15.3	32.67	73.42	82.85	710.39	7.29	9.676	8.574	9.61	6.75
18 x 6 x 30.6	59.29	104.92	107.49	968.95	6.76	9.015	9.235	17.44	13.50
25.5	49.67	93.55	96.69	867.74	6.87	9.276	8.974	14.61	11.25
20.4	39.95	78.59	88.31	758.92	7.00	9.656	8.594	11.75	9.00
15.3	30.12	62.39	79.76	638.85	7.12	10.240	8.010	8.86	6.75
18 x 4 x 30.6	54.19	87.71	98.91	848.38	6.56	9.673	8.577	15.94	13.50
25.5	45.42	76.52	91.35	759.93	6.66	9.931	8.319	13.36	11.25
20.4	36.55	64.47	83.61	664.32	6.77	10.305	7.945	10.75	9.00
15.3	27.57	51.33	75.70	558.26	6.86	10.876	7.374	8.11	6.75
16 x 12 x 30.6	69.49	98.10	143.36	946.46	6.26	6.602	9.648	20.44	12.00
25.5	58.17	90.65	124.65	852.85	6.39	6.842	9.408	17.11	10.00
20.4	46.75	83.07	104.53	752.16	6.56	7.196	9.054	13.75	8.00
15.3	35.22	75.34	82.71	640.69	6.74	7.746	8.504	10.36	6.00
16 x 10 x 30.6	64.39	95.75	126.09	884.38	6.24	7.014	9.236	18.94	12.00
25.5	53.92	88.54	109.68	796.12	6.37	7.258	8.992	15.86	10.00
20.4	43.35	81.19	92.03	700.97	6.52	7.616	8.634	12.75	8.00
15.3	32.67	72.88	73.70	595.43	6.68	8.170	8.080	9.61	6.00
16 x 8 x 30.6	59.29	92.80	108.71	813.52	6.20	7.484	8.766	17.44	12.00
25.5	49.67	85.89	94.64	731.67	6.31	7.731	8.519	14.61	10.00
20.4	39.95	78.84	79.49	643.18	6.44	8.092	8.158	11.75	8.00
15.3	30.12	63.01	71.64	544.78	6.57	8.645	7.605	8.86	6.00
16 x 6 x 30.6	54.19	88.98	91.20	731.87	6.10	8.025	8.225	15.94	12.00
25.5	45.42	79.51	82.46	657.81	6.20	8.273	7.977	13.36	10.00
20.4	36.55	66.89	75.80	577.43	6.31	8.633	7.617	10.75	8.00
15.3	27.57	53.13	68.99	487.73	6.41	9.180	7.070	8.11	6.00
16 x 4 x 30.6	49.09	73.56	83.85	636.77	5.92	8.656	7.594	14.44	12.00
25.5	41.17	64.30	77.87	572.31	6.01	8.901	7.349	12.11	10.00
20.4	33.15	54.24	71.74	501.94	6.10	9.253	6.997	9.75	8.00
15.3	25.02	43.22	65.45	422.97	6.17	9.787	6.463	7.36	6.00



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

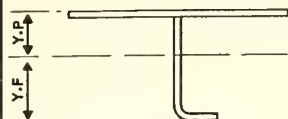
STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 12 x 30.6	66.94	89.60	132.32	814.71	5.90	6.157	9.093	19.69	11.25
25.5	56.05	83.06	115.18	735.93	6.03	6.389	8.861	16.48	9.37
20.4	45.05	76.38	96.68	650.74	6.19	6.731	8.519	13.25	7.50
15.3	33.95	69.57	76.54	555.80	6.36	7.261	7.989	9.98	5.62
15 x 11 x 30.6	64.39	88.61	124.25	788.77	5.90	6.348	8.902	18.94	11.25
25.5	53.92	82.16	108.17	712.09	6.03	6.583	8.667	15.86	9.37
20.4	43.35	75.59	90.82	629.09	6.17	6.927	8.323	12.75	7.50
15.3	32.67	68.87	71.92	536.50	6.34	7.460	7.790	9.61	5.62
15 x 10 x 30.6	61.84	87.50	116.15	761.05	5.89	6.553	8.697	18.19	11.25
25.5	51.80	81.16	101.14	686.69	6.01	6.789	8.461	15.23	9.37
20.4	41.65	74.69	84.94	606.09	6.15	7.136	8.114	12.25	7.50
15.3	31.40	67.29	68.09	516.09	6.30	7.670	7.580	9.23	5.62
15 x 9 x 30.6	59.29	86.26	108.01	731.38	5.88	6.771	8.479	17.44	11.25
25.5	49.67	80.04	94.09	659.56	5.99	7.010	8.240	14.61	9.37
20.4	39.95	73.70	79.05	581.61	6.13	7.358	7.892	11.75	7.50
15.3	30.12	62.65	67.21	494.47	6.26	7.892	7.358	8.86	5.62
15 x 8 x 30.6	56.74	84.85	99.85	699.54	5.85	7.006	8.244	16.69	11.25
25.5	47.55	78.77	87.02	630.52	5.96	7.246	8.004	13.98	9.37
20.4	38.25	72.56	73.14	555.50	6.09	7.595	7.655	11.25	7.50
15.3	28.85	58.01	66.21	471.52	6.21	8.129	7.121	8.48	5.62
15 x 7 x 30.6	54.19	83.25	91.65	665.27	5.81	7.259	7.991	15.94	11.25
25.5	45.42	77.33	79.92	599.35	5.92	7.499	7.751	13.36	9.37
20.4	36.55	67.22	71.28	527.58	6.03	7.848	7.402	10.75	7.50
15.3	27.57	53.36	65.08	447.12	6.14	8.380	6.870	8.11	5.62
15 x 6 x 30.6	51.64	81.40	83.42	628.29	5.76	7.531	7.719	15.19	11.25
25.5	43.30	72.81	75.66	565.83	5.86	7.772	7.478	12.73	9.37
20.4	34.85	61.29	69.79	497.68	5.96	8.119	7.131	10.25	7.50
15.3	26.30	48.70	63.78	421.12	6.06	8.647	6.603	7.73	5.62
15 x 5 x 30.6	49.09	75.16	79.24	588.26	5.69	7.826	7.424	14.44	11.25
25.5	41.17	65.67	73.72	529.66	5.78	8.066	7.184	12.11	9.37
20.4	33.15	55.35	68.07	465.56	5.87	8.411	6.839	9.75	7.50
15.3	25.02	44.04	62.27	393.37	5.95	8.933	6.317	7.36	5.62
15 x 4 x 30.6	46.54	66.87	76.70	544.79	5.59	8.147	7.103	13.69	11.25
25.5	39.05	58.51	71.44	490.53	5.67	8.384	6.866	11.48	9.37
20.4	31.45	49.40	66.05	430.97	5.76	8.725	6.525	9.25	7.50
15.3	23.75	39.37	60.50	363.69	5.82	9.238	6.012	6.98	5.62
14 x 10 x 30.6	59.29	79.53	106.43	648.63	5.53	6.094	8.156	17.44	10.50
25.5	49.67	74.01	92.80	586.71	5.65	6.323	7.927	14.61	8.75
20.4	39.95	68.37	78.00	519.20	5.79	6.656	7.594	11.75	7.00
15.3	30.12	61.82	62.60	443.24	5.93	7.169	7.081	8.86	5.25
14 x 9 x 30.6	56.74	78.43	98.85	623.16	5.52	6.304	7.946	16.69	10.50
25.5	47.55	73.01	86.21	563.32	5.64	6.534	7.716	13.98	8.75
20.4	38.25	67.48	72.49	497.99	5.76	6.870	7.380	11.25	7.00
15.3	28.85	57.48	61.81	424.40	5.89	7.383	6.867	8.48	5.25
14 x 8 x 30.6	54.19	77.17	91.23	595.75	5.50	6.530	7.720	15.94	10.50
25.5	45.42	71.88	79.60	538.22	5.61	6.762	7.488	13.36	8.75
20.4	36.55	66.46	66.96	475.31	5.73	7.098	7.152	10.75	7.00
15.3	27.57	53.13	60.91	404.36	5.84	7.611	6.639	8.11	5.25
14 x 7 x 30.6	51.64	75.73	83.58	566.18	5.47	6.774	7.476	15.19	10.50
25.5	43.30	70.57	72.97	511.22	5.57	7.006	7.244	12.73	8.75
20.4	34.85	61.42	65.29	451.02	5.68	7.343	6.907	10.25	7.00
15.3	26.30	48.77	59.88	383.02	5.78	7.853	6.397	7.73	5.25

PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

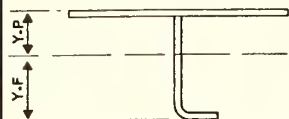
60t



STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
14 x 6 x 30.6	49.09	74.06	75.90	534.17	5.42	7.038	7.212	14.44	10.50
25.5	41.17	66.31	69.07	482.09	5.51	7.270	6.980	12.11	8.75
20.4	33.15	55.87	63.95	424.92	5.61	7.605	6.645	9.75	7.00
15.3	25.02	44.41	58.69	360.23	5.69	8.112	6.138	7.36	5.25
14 x 5 x 30.6	46.54	68.19	72.11	499.41	5.35	7.324	6.926	13.69	10.50
25.5	39.05	59.64	67.31	450.58	5.44	7.556	6.694	11.48	8.75
20.4	31.45	50.31	62.38	396.82	5.52	7.888	6.362	9.25	7.00
15.3	23.75	40.04	57.30	335.85	5.59	8.389	5.861	6.98	5.25
14 x 4 x 30.6	43.99	60.44	69.79	461.53	5.26	7.637	6.613	12.94	10.50
25.5	36.92	52.94	65.21	416.36	5.34	7.865	6.385	10.86	8.75
20.4	29.75	44.73	60.51	366.47	5.41	8.194	6.056	8.75	7.00
15.3	22.47	35.66	55.66	309.71	5.47	8.686	5.564	6.61	5.25
13 x 9 x 30.6	54.19	70.86	89.92	525.11	5.16	5.840	7.410	15.94	9.75
25.5	45.42	66.20	78.52	475.93	5.27	6.061	7.189	13.36	8.12
20.4	36.55	61.43	66.10	421.86	5.39	6.383	6.867	10.75	6.50
15.3	27.57	52.44	56.53	360.45	5.51	6.874	6.376	8.11	4.87
13 x 8 x 30.6	51.64	69.75	82.86	501.79	5.15	6.056	7.194	15.19	9.75
25.5	43.30	65.19	72.38	454.47	5.25	6.279	6.971	12.73	8.12
20.4	34.85	60.52	60.95	402.37	5.36	6.602	6.648	10.25	6.50
15.3	26.30	48.38	55.72	343.13	5.47	7.092	6.158	7.73	4.87
13 x 7 x 30.6	49.09	68.47	75.76	476.55	5.12	6.290	6.960	14.44	9.75
25.5	41.17	64.03	66.22	431.33	5.22	6.514	6.736	12.11	8.12
20.4	33.15	55.79	59.48	381.45	5.32	6.837	6.413	9.75	6.50
15.3	25.02	44.32	54.79	324.64	5.41	7.325	5.925	7.36	4.87
13 x 6 x 30.6	46.54	66.98	68.63	449.14	5.08	6.545	6.705	13.69	9.75
25.5	39.05	60.03	62.68	406.29	5.16	6.768	6.482	11.48	8.12
20.4	31.45	50.62	58.27	358.91	5.25	7.090	6.160	9.25	6.50
15.3	23.75	40.25	53.72	304.87	5.33	7.575	5.675	6.98	4.87
13 x 5 x 30.6	43.99	61.46	65.23	419.28	5.01	6.822	6.428	12.94	9.75
25.5	36.92	53.82	61.09	379.10	5.09	7.045	6.205	10.86	8.12
20.4	29.75	45.43	56.84	334.57	5.17	7.364	5.886	8.75	6.50
15.3	22.47	36.17	52.45	283.66	5.23	7.842	5.408	6.61	4.87
13 x 4 x 30.6	41.44	54.26	63.12	386.60	4.93	7.125	6.125	12.19	9.75
25.5	34.80	47.58	59.19	349.49	5.00	7.345	5.905	10.23	8.12
20.4	28.05	40.23	55.14	308.20	5.07	7.660	5.590	8.25	6.50
15.3	21.20	32.09	50.94	260.86	5.11	8.129	5.121	6.23	4.87
12 x 9 x 30.6	51.64	63.57	81.23	436.84	4.80	5.378	6.872	15.19	9.00
25.5	43.30	59.61	71.04	397.06	4.91	5.589	6.661	12.73	7.50
20.4	34.85	55.55	59.87	352.98	5.02	5.896	6.354	10.25	6.00
15.3	26.30	47.52	51.38	302.42	5.13	6.364	5.886	7.73	4.50
12 x 8 x 30.6	49.09	62.60	74.72	417.26	4.79	5.584	6.666	14.44	9.00
25.5	41.17	58.73	65.37	378.96	4.89	5.797	6.453	12.11	7.50
20.4	33.15	54.75	55.11	336.44	4.99	6.105	6.145	9.75	6.00
15.3	25.02	43.77	50.66	287.63	5.09	6.572	5.678	7.36	4.50
12 x 7 x 30.6	46.54	61.47	68.18	396.00	4.77	5.808	6.442	13.69	9.00
25.5	39.05	57.70	59.67	359.36	4.86	6.022	6.228	11.48	7.50
20.4	31.45	50.33	53.83	318.62	4.95	6.331	5.919	9.25	6.00
15.3	23.75	40.00	49.83	271.80	5.03	6.795	5.455	6.98	4.50
12 x 6 x 30.6	43.99	60.16	61.60	372.83	4.73	6.052	6.198	12.94	9.00
25.5	36.92	53.95	56.50	338.10	4.81	6.266	5.984	10.86	7.50
20.4	29.75	45.54	52.74	299.39	4.89	6.574	5.676	8.75	6.00
15.3	22.47	36.23	48.86	254.83	4.96	7.034	5.216	6.61	4.50



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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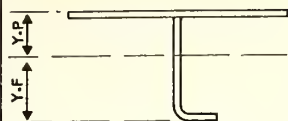
STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
12 x 5 x 30.6	41.44	54.99	58.59	347.49	4.67	6.319	5.931	12.19	9.00
25.5	34.80	48.21	55.08	314.93	4.75	6.533	5.717	10.23	7.50
20.4	28.05	40.74	51.46	278.55	4.82	6.837	5.413	8.25	6.00
15.3	21.20	32.45	47.71	236.59	4.87	7.291	4.959	6.23	4.50
12 x 4 x 30.6	38.89	48.33	56.70	319.64	4.59	6.613	5.637	11.44	9.00
25.5	32.67	42.44	53.37	289.60	4.66	6.824	5.426	9.61	7.50
20.4	26.35	35.92	49.92	255.90	4.72	7.124	5.126	7.75	6.00
15.3	19.92	28.66	46.34	216.92	4.75	7.569	4.681	5.86	4.50
11 x 8 x 25.5	39.05	52.48	58.56	311.36	4.52	5.317	5.933	11.48	6.87
22.95	35.29	50.84	54.14	294.98	4.57	5.448	5.802	10.38	6.19
20.4	31.45	49.15	49.43	277.25	4.62	5.609	5.641	9.25	5.50
17.85	27.64	44.53	47.46	258.47	4.66	5.804	5.446	8.13	4.82
15.3	23.75	39.28	45.71	237.67	4.71	6.051	5.199	6.98	4.12
11 x 7 x 25.5	36.92	51.59	53.34	295.01	4.49	5.531	5.719	10.86	6.87
22.95	33.38	49.33	49.99	279.32	4.54	5.662	5.588	9.82	6.19
20.4	29.75	45.04	48.34	262.30	4.58	5.824	5.426	8.75	5.50
17.85	26.15	40.59	46.69	244.28	4.62	6.018	5.232	7.69	4.82
15.3	22.47	35.82	44.98	224.31	4.65	6.263	4.987	6.61	4.12
11 x 6 x 25.5	34.80	48.09	50.53	277.21	4.45	5.764	5.486	10.23	6.87
22.95	31.46	44.49	48.98	262.29	4.49	5.895	5.355	9.25	6.19
20.4	28.05	40.64	47.38	246.11	4.53	6.056	5.194	8.25	5.50
17.85	24.66	36.64	45.78	228.95	4.56	6.249	5.001	7.25	4.82
15.3	21.20	32.34	44.12	209.95	4.59	6.491	4.759	6.23	4.12
11 x 5 x 25.5	32.67	42.82	49.28	257.74	4.39	6.019	5.231	9.61	6.87
22.95	29.55	39.63	47.79	243.73	4.43	6.149	5.101	8.69	6.19
20.4	26.35	36.22	46.24	228.51	4.46	6.308	4.942	7.75	5.50
17.85	23.17	32.68	44.70	212.36	4.48	6.499	4.751	6.82	4.82
15.3	19.92	28.86	43.09	194.46	4.50	6.737	4.513	5.86	4.12
11 x 4 x 25.5	30.55	37.52	47.75	236.37	4.31	6.300	4.950	8.98	6.87
22.95	27.64	34.76	46.33	223.41	4.34	6.428	4.822	8.13	6.19
20.4	24.65	31.79	44.86	209.32	4.36	6.584	4.666	7.25	5.50
17.85	21.69	28.70	43.38	194.34	4.38	6.770	4.480	6.38	4.82
15.3	18.65	25.38	41.84	177.72	4.39	7.003	4.247	5.48	4.12
10 x 8 x 25.5	36.92	46.45	51.95	251.36	4.15	4.839	5.411	10.86	6.25
22.95	33.38	45.11	48.07	238.53	4.19	4.962	5.288	9.82	5.63
20.4	29.75	43.72	43.91	224.56	4.24	5.114	5.136	8.75	5.00
17.85	26.15	39.59	42.33	209.67	4.28	5.297	4.953	7.69	4.38
15.3	22.47	34.93	40.88	193.08	4.32	5.528	4.722	6.61	3.75
10 x 7 x 25.5	34.80	45.68	47.21	237.97	4.13	5.041	5.209	10.23	6.25
22.95	31.46	43.69	44.37	225.65	4.17	5.165	5.085	9.25	5.63
20.4	28.05	39.92	43.02	212.23	4.21	5.316	4.934	8.25	5.00
17.85	24.66	35.99	41.66	197.92	4.24	5.499	4.751	7.25	4.38
15.3	21.20	31.77	40.24	181.98	4.27	5.728	4.522	6.23	3.75
10 x 6 x 25.5	32.67	42.44	44.77	223.32	4.09	5.262	4.988	9.61	6.25
22.95	29.55	39.29	43.50	211.60	4.12	5.386	4.864	8.69	5.63
20.4	26.35	35.91	42.18	198.83	4.16	5.537	4.713	7.75	5.00
17.85	23.17	32.39	40.86	185.20	4.19	5.718	4.532	6.82	4.38
15.3	19.92	28.60	39.49	170.01	4.21	5.944	4.306	5.86	3.75
12.75	16.69	24.64	38.09	153.36	4.21	6.224	4.026	4.91	3.13
10 x 5 x 25.5	30.55	37.64	43.68	207.23	4.03	5.505	4.745	8.98	6.25
22.95	27.64	34.87	42.45	196.23	4.06	5.628	4.622	8.13	5.63
20.4	24.65	31.89	41.18	184.21	4.09	5.777	4.473	7.25	5.00
17.85	21.69	28.78	39.90	171.38	4.11	5.955	4.295	6.38	4.38
15.3	18.65	25.42	38.58	157.08	4.12	6.178	4.072	5.48	3.75

**PROPERTIES OF
COMBINED BEAM AND PLATE
FLANGED PLATE**

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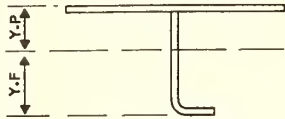


STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	Y F	Y P	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 4 x 25.5	28.42	32.82	42.33	189.49	3.96	5.773	4.477	8.36	6.25
22.95	25.72	30.43	41.16	179.32	3.98	5.894	4.356	7.57	5.63
20.4	22.95	27.85	39.95	168.19	4.00	6.040	4.210	6.75	5.00
17.85	20.20	25.15	38.73	156.31	4.02	6.215	4.035	5.94	4.38
15.3	17.37	22.24	37.46	143.04	4.02	6.432	3.818	5.11	3.75
9 x 6 x 25.5	30.55	37.00	39.22	176.11	3.72	4.760	4.490	8.98	5.62
20.4	24.65	31.36	37.14	157.28	3.78	5.016	4.234	7.25	4.50
15.3	18.65	25.00	34.97	134.84	3.82	5.394	3.856	5.48	3.37
10.2	12.54	17.79	32.63	106.49	3.78	5.987	3.263	3.69	2.25
9 x 5 x 25.5	28.42	32.69	38.28	163.09	3.67	4.989	4.261	8.36	5.62
20.4	22.95	27.73	36.28	145.37	3.72	5.243	4.007	6.75	4.50
15.3	17.37	22.13	34.17	124.24	3.74	5.614	3.636	5.11	3.37
10.2	11.69	15.77	31.90	97.60	3.68	6.190	3.060	3.44	2.25
9 x 4 x 25.5*	26.30	28.35	37.10	148.65	3.60	5.244	4.006	7.73	5.62
20.4*	21.25	24.08	35.20	132.28	3.64	5.492	3.758	6.25	4.50
15.3	16.10	19.25	33.19	112.70	3.64	5.854	3.396	4.73	3.37
10.2	10.84	13.74	31.00	88.07	3.56	6.409	2.841	3.19	2.25
8 x 6 x 25.5*	28.42	31.77	33.87	135.26	3.34	4.257	3.993	8.36	5.00
20.4*	22.95	26.98	32.26	121.23	3.40	4.493	3.757	6.75	4.00
15.3	17.37	21.54	30.56	104.23	3.43	4.839	3.411	5.11	3.00
10.2	11.69	15.33	28.70	82.43	3.39	5.377	2.873	3.44	2.00
8 x 5 x 25.5	26.30	27.95	33.08	124.99	3.30	4.472	3.778	7.73	5.00
20.4	21.25	23.76	31.52	111.77	3.34	4.705	3.545	6.25	4.00
15.3	16.10	18.98	29.87	95.75	3.36	5.045	3.205	4.73	3.00
10.2	10.84	13.52	28.06	75.29	3.29	5.567	2.683	3.19	2.00
8 x 4 x 25.5*	24.17	24.10	32.08	113.53	3.23	4.711	3.539	7.11	5.00
20.4*	19.55	20.51	30.60	101.31	3.27	4.939	3.311	5.75	4.00
15.3	14.82	16.41	29.02	86.49	3.27	5.269	2.981	4.36	3.00
10.2	9.99	11.72	27.26	67.61	3.18	5.770	2.480	2.94	2.00

*Indicates similarity to (L) shape.



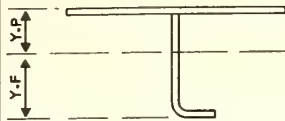
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

11.47 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 18 x 30.6	89.89	137.16	230.96	1,573.20	7.10	6.812	11.469	26.44	13.50
25.5	75.17	127.20	200.30	1,422.15	7.28	7.100	11.181	22.11	11.25
20.4	60.35	117.07	167.46	1,259.59	7.48	7.522	10.759	17.75	9.00
15.3	45.52	106.77	132.00	1,079.06	7.72	8.175	10.106	13.36	6.75
18 x 16 x 30.6	84.79	135.30	211.27	1,507.85	7.13	7.137	11.144	24.94	13.50
25.5	70.92	125.51	183.23	1,361.71	7.29	7.432	10.849	20.86	11.25
20.4	56.95	115.56	153.20	1,204.22	7.49	7.860	10.421	16.75	9.00
15.3	42.87	105.44	120.79	1,029.14	7.70	8.520	9.761	12.61	6.75
18 x 14 x 30.6	79.69	133.12	191.48	1,435.54	7.14	7.497	10.784	23.44	13.50
25.5	66.67	123.53	166.09	1,295.06	7.29	7.797	10.484	19.61	11.25
20.4	53.55	113.79	138.91	1,143.46	7.47	8.232	10.049	15.75	9.00
15.3	40.32	103.87	109.56	974.70	7.66	8.897	9.384	11.86	6.75
18 x 12 x 30.6	74.59	130.50	171.59	1,355.11	7.13	7.897	10.384	21.94	13.50
25.5	62.42	121.17	148.89	1,221.20	7.27	8.202	10.079	18.36	11.25
20.4	50.15	111.67	124.57	1,076.46	7.43	8.641	9.640	14.75	9.00
15.3	37.77	98.30	102.00	915.11	7.60	9.309	8.972	11.11	6.75
18 x 10 x 30.6	69.49	127.33	151.59	1,265.10	7.09	8.346	9.935	20.44	13.50
25.5	58.17	118.30	131.61	1,138.90	7.22	8.654	9.627	17.11	11.25
20.4	46.75	109.11	110.19	1,022.21	7.36	9.095	9.186	13.75	9.00
15.3	35.22	87.03	99.73	849.60	7.50	9.762	8.519	10.36	6.75
18 x 8 x 30.6	64.39	123.40	131.48	1,163.70	7.01	8.851	9.430	18.94	13.50
25.5	53.92	114.26	114.75	1,046.61	7.13	9.160	9.121	15.86	11.25
20.4	43.35	95.77	105.93	919.48	7.25	9.601	8.680	12.75	9.00
15.3	32.67	75.73	96.93	777.24	7.36	10.263	8.018	9.61	6.75
18 x 6 x 30.6	59.29	111.27	118.39	1,048.59	6.88	9.424	8.857	17.44	13.50
25.5	49.67	96.84	110.23	942.40	6.98	9.732	8.549	14.61	11.25
20.4	39.95	81.30	101.90	826.72	7.08	10.168	8.113	11.75	9.00
15.3	30.12	64.42	93.39	696.90	7.16	10.818	7.463	8.86	6.75
18 x 4 x 30.6	54.19	90.95	111.79	916.78	6.66	10.080	8.201	15.94	13.50
25.5	45.42	79.35	104.29	823.80	6.75	10.382	7.899	13.36	11.25
20.4	36.55	66.80	96.62	721.97	6.83	10.809	7.472	10.75	9.00
15.3	27.57	53.08	88.74	607.18	6.87	11.439	6.842	8.11	6.75
16 x 12 x 30.6	69.49	111.14	148.15	1,033.90	6.41	6.979	9.302	20.44	12.00
25.5	58.17	103.76	128.76	935.46	6.54	7.265	9.016	17.11	10.00
20.4	46.75	96.23	107.86	827.98	6.69	7.677	8.604	13.75	8.00
15.3	35.22	85.15	88.54	706.68	6.84	8.299	7.982	10.36	6.00
16 x 10 x 30.6	64.39	108.54	130.36	964.27	6.38	7.397	8.884	18.94	12.00
25.5	53.92	101.39	113.35	871.32	6.50	7.687	8.594	15.86	10.00
20.4	43.35	94.09	95.00	769.65	6.63	8.101	8.180	12.75	8.00
15.3	32.67	75.06	86.63	654.74	6.76	8.723	7.558	9.61	6.00
16 x 8 x 30.6	59.29	105.27	112.45	885.23	6.32	7.872	8.409	17.44	12.00
25.5	49.67	97.86	98.42	798.91	6.43	8.164	8.117	14.61	10.00
20.4	39.95	82.10	91.42	704.24	6.54	8.578	7.703	11.75	8.00
15.3	30.12	64.94	84.25	597.07	6.63	9.194	7.087	8.86	6.00
16 x 6 x 30.6	54.19	94.43	101.05	794.74	6.20	8.416	7.865	15.94	12.00
25.5	45.42	82.30	94.59	716.49	6.29	8.706	7.575	13.36	10.00
20.4	36.55	69.16	87.97	630.40	6.38	9.115	7.166	10.75	8.00
15.3	27.57	54.80	81.19	532.67	6.44	9.720	6.561	8.11	6.00
16 x 4 x 30.6	49.09	76.30	95.37	690.10	6.00	9.045	7.236	14.44	12.00
25.5	41.17	66.66	89.45	621.86	6.08	9.329	6.952	12.11	10.00
20.4	33.15	56.17	83.36	546.36	6.14	9.727	6.554	9.75	8.00
15.3	25.02	44.64	77.10	460.29	6.17	10.311	5.970	7.36	6.00



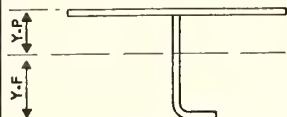
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 12 x 30.6	66.94	101.88	136.78	892.22	6.04	6.523	8.758	19.69	11.25
25.5	56.05	95.39	118.99	809.05	6.17	6.799	8.482	16.48	9.37
20.4	45.05	88.77	99.74	717.71	6.32	7.196	8.085	13.25	7.50
15.3	33.95	78.76	81.99	613.88	6.46	7.794	7.487	9.98	5.62
15 x 11 x 30.6	64.39	100.77	128.46	862.94	6.04	6.718	8.563	18.94	11.25
25.5	53.92	94.38	111.76	781.93	6.16	6.996	8.285	15.86	9.37
20.4	43.35	87.86	93.70	692.89	6.29	7.394	7.887	12.75	7.50
15.3	32.67	74.02	81.17	591.61	6.42	7.993	7.288	9.61	5.62
15 x 10 x 30.6	61.84	99.54	120.10	831.75	6.02	6.925	8.356	18.19	11.25
25.5	51.80	93.26	104.52	753.12	6.14	7.205	8.076	15.23	9.37
20.4	41.65	86.84	87.66	666.61	6.26	7.605	7.676	12.25	7.50
15.3	31.40	69.27	80.26	568.15	6.38	8.202	7.079	9.23	5.62
15 x 9 x 30.6	59.29	98.16	111.72	798.44	6.00	7.147	8.134	17.44	11.25
25.5	49.67	92.00	97.26	722.44	6.11	7.428	7.853	14.61	9.37
20.4	39.95	81.60	85.70	638.73	6.22	7.828	7.453	11.75	7.50
15.3	30.12	64.51	79.24	543.39	6.32	8.423	6.858	8.86	5.62
15 x 8 x 30.6	56.74	96.59	103.31	762.81	5.97	7.384	7.897	16.69	11.25
25.5	47.55	89.98	90.57	689.72	6.07	7.666	7.615	13.98	9.37
20.4	38.25	75.53	84.41	609.11	6.17	8.065	7.216	11.25	7.50
15.3	28.85	59.75	78.08	517.23	6.25	8.657	6.624	8.48	5.62
15 x 7 x 30.6	54.19	94.81	94.87	724.60	5.92	7.638	7.643	15.94	11.25
25.5	45.42	82.67	88.94	654.74	6.01	7.920	7.361	13.36	9.37
20.4	36.55	69.45	82.94	577.58	6.11	8.317	6.964	10.75	7.50
15.3	27.57	54.98	76.77	489.54	6.17	8.904	6.377	8.11	5.62
15 x 6 x 30.6	51.64	86.39	92.75	683.51	5.86	7.911	7.370	15.19	11.25
25.5	43.30	75.35	87.07	617.26	5.94	8.192	7.089	12.73	9.37
20.4	34.85	63.35	81.25	543.94	6.02	8.586	6.695	10.25	7.50
15.3	26.30	50.20	75.26	460.18	6.07	9.166	6.115	7.73	5.62
15 x 5 x 30.6	49.09	77.89	90.35	639.21	5.77	8.206	7.075	14.44	11.25
25.5	41.17	68.01	84.89	577.00	5.85	8.484	6.797	12.11	9.37
20.4	33.15	57.25	79.28	507.99	5.92	8.874	6.407	9.75	7.50
15.3	25.02	45.42	73.51	429.01	5.96	9.445	5.836	7.36	5.62
15 x 4 x 30.6	46.54	69.36	87.52	591.31	5.66	8.525	6.756	13.69	11.25
25.5	39.05	60.65	82.32	533.64	5.74	8.799	6.482	11.48	9.37
20.4	31.45	51.13	76.97	469.46	5.79	9.182	6.099	9.25	7.50
15.3	23.75	40.64	71.45	395.84	5.81	9.741	5.540	6.98	5.62
14 x 10 x 30.6	59.29	90.81	110.09	710.65	5.66	6.455	7.826	17.44	10.50
25.5	49.67	85.35	95.90	644.89	5.77	6.725	7.556	14.61	8.75
20.4	39.95	79.75	80.48	572.06	5.89	7.108	7.173	11.75	7.00
15.3	30.12	63.61	74.01	488.53	5.99	7.680	6.601	8.86	5.25
14 x 9 x 30.6	56.74	89.58	102.26	681.91	5.64	6.668	7.613	16.69	10.50
25.5	47.55	84.22	89.11	618.31	5.75	6.939	7.342	13.98	8.75
20.4	38.25	74.81	78.73	547.79	5.85	7.323	6.958	11.25	7.00
15.3	28.85	59.15	73.08	466.87	5.94	7.893	6.388	8.48	5.25
14 x 8 x 30.6	54.19	88.17	94.41	651.10	5.61	6.897	7.384	15.94	10.50
25.5	45.42	82.30	82.93	589.90	5.71	7.168	7.113	13.36	8.75
20.4	36.55	69.12	77.56	521.96	5.81	7.551	6.730	10.75	7.00
15.3	27.57	54.69	72.03	443.96	5.88	8.118	6.163	8.11	5.25
14 x 7 x 30.6	51.64	86.52	86.56	617.96	5.57	7.142	7.139	15.19	10.50
25.5	43.30	75.47	81.46	559.46	5.66	7.413	6.868	12.73	8.75
20.4	34.85	63.43	76.22	494.41	5.74	7.795	6.486	10.25	7.00
15.3	26.30	50.22	70.83	419.66	5.80	8.356	5.925	7.73	5.25



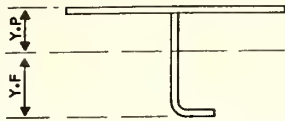
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
14 x 6 x 30.6	49.09	78.61	84.70	582.24	5.51	7.407	6.874	14.44	10.50
25.5	41.17	68.62	79.76	526.76	5.59	7.676	6.605	12.11	8.75
20.4	33.15	57.72	74.68	464.96	5.67	8.055	6.226	9.75	7.00
15.3	25.02	45.75	69.44	393.86	5.71	8.609	5.672	7.36	5.25
14 x 5 x 30.6	46.54	70.66	82.51	543.61	5.43	7.693	6.588	13.69	10.50
25.5	39.05	61.75	77.76	491.54	5.50	7.960	6.321	11.48	8.75
20.4	31.45	52.00	72.88	433.40	5.57	8.334	5.947	9.25	7.00
15.3	23.75	41.27	67.82	366.41	5.59	8.879	5.402	6.98	5.25
14 x 4 x 30.6	43.99	62.69	79.92	501.71	5.33	8.003	6.278	12.94	10.50
25.5	36.92	54.86	75.40	453.50	5.39	8.267	6.014	10.86	8.75
20.4	29.75	46.27	70.74	399.50	5.44	8.634	5.647	8.75	7.00
15.3	22.47	36.78	65.91	337.14	5.45	9.166	5.115	6.61	5.25
13 x 9 x 30.6	54.19	81.25	93.05	576.07	5.28	6.191	7.090	15.94	9.75
25.5	45.42	76.65	81.16	523.53	5.38	6.451	6.830	13.36	8.12
20.4	36.55	68.19	71.92	464.85	5.48	6.817	6.464	10.75	6.50
15.3	27.57	53.93	67.04	396.94	5.56	7.360	5.921	8.11	4.87
13 x 8 x 30.6	51.64	80.01	85.76	549.71	5.25	6.410	6.871	15.19	9.75
25.5	43.30	74.83	75.50	499.12	5.34	6.670	6.611	12.73	8.12
20.4	34.85	62.89	70.87	442.55	5.43	7.036	6.245	10.25	6.50
15.3	26.30	49.77	66.09	377.07	5.50	7.576	5.705	7.73	4.87
13 x 7 x 30.6	49.09	78.43	78.57	521.29	5.21	6.646	6.635	14.44	9.75
25.5	41.17	68.48	74.18	472.90	5.30	6.906	6.375	12.11	8.12
20.4	33.15	57.59	69.67	418.72	5.38	7.271	6.010	9.75	6.50
15.3	25.02	45.61	65.00	355.96	5.42	7.805	5.476	7.36	4.87
13 x 6 x 30.6	46.54	71.08	76.90	490.56	5.16	6.902	6.379	13.69	9.75
25.5	39.05	62.10	72.65	444.67	5.24	7.160	6.121	11.48	8.12
20.4	31.45	52.27	68.27	393.18	5.30	7.522	5.759	9.25	6.50
15.3	23.75	41.44	63.74	333.50	5.33	8.049	5.232	6.98	4.87
13 x 5 x 30.6	43.99	63.69	74.92	457.22	5.09	7.178	6.103	12.94	9.75
25.5	36.92	55.71	70.84	414.17	5.15	7.434	5.847	10.86	8.12
20.4	29.75	46.94	66.62	365.76	5.21	7.791	5.490	8.75	6.50
15.3	22.47	37.26	62.25	309.55	5.22	8.308	4.973	6.61	4.87
13 x 4 x 30.6	41.44	56.27	72.56	420.93	4.99	7.480	5.801	12.19	9.75
25.5	34.80	49.29	68.68	381.12	5.05	7.732	5.549	10.23	8.12
20.4	28.05	41.60	64.66	336.22	5.09	8.082	5.199	8.25	6.50
15.3	21.20	33.07	60.48	283.97	5.09	8.586	4.695	6.23	4.87
12 x 9 x 30.6	51.64	73.20	84.07	480.55	4.91	5.716	6.565	15.19	9.00
25.5	43.30	69.29	73.42	437.80	5.01	5.963	6.318	12.73	7.50
20.4	34.85	61.73	65.28	389.65	5.10	6.312	5.969	10.25	6.00
15.3	26.30	48.85	61.12	333.41	5.17	6.826	5.455	7.73	4.50
12 x 8 x 30.6	49.09	72.10	77.35	458.28	4.89	5.925	6.356	14.44	9.00
25.5	41.17	67.57	68.28	417.08	4.98	6.173	6.108	12.11	7.50
20.4	33.15	56.84	64.34	370.63	5.06	6.521	5.760	9.75	6.00
15.3	25.02	44.99	60.27	316.37	5.11	7.032	5.249	7.36	4.50
12 x 7 x 30.6	46.54	70.59	70.83	434.20	4.85	6.151	6.130	13.69	9.00
25.5	39.05	61.70	67.11	394.77	4.93	6.398	5.883	11.48	7.50
20.4	31.45	51.93	63.27	350.26	5.00	6.745	5.536	9.25	6.00
15.3	23.75	41.13	59.29	298.24	5.04	7.251	5.030	6.98	4.50
12 x 6 x 30.6	43.99	63.80	69.34	408.09	4.80	6.396	5.885	12.94	9.00
25.5	36.92	55.81	65.74	370.68	4.87	6.642	5.639	10.86	7.50
20.4	29.75	47.01	62.01	328.37	4.93	6.986	5.295	8.75	6.00
15.3	22.47	37.27	58.14	278.90	4.96	7.484	4.797	6.61	4.50



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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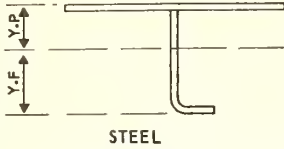
STEEL

11.47 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
12 x 5 x 30.6	41.44	56.98	67.58	379.66	4.74	6.663	5.618	12.19	9.00
25.5	34.80	49.89	64.11	344.57	4.80	6.906	5.375	10.23	7.50
20.4	28.05	42.07	60.53	304.80	4.84	7.245	5.036	8.25	6.00
15.3	21.20	33.39	56.79	258.25	4.85	7.733	4.548	6.23	4.50
12 x 4 x 30.6	38.89	50.13	65.44	348.60	4.64	6.954	5.327	11.44	9.00
25.5	32.67	43.95	62.15	316.19	4.69	7.194	5.087	9.61	7.50
20.4	26.35	37.12	58.74	279.35	4.73	7.525	4.756	7.75	6.00
15.3	19.92	29.52	55.17	236.14	4.72	8.000	4.281	5.86	4.50
11 x 8 x 25.5	39.05	60.52	61.27	343.47	4.60	5.675	5.606	11.48	6.87
22.95	35.29	55.90	59.65	325.53	4.64	5.824	5.457	10.38	6.19
20.4	31.45	50.96	57.98	305.95	4.68	6.004	5.277	9.25	5.50
17.85	27.64	45.84	56.30	285.03	4.71	6.218	5.063	8.13	4.82
15.3	23.75	40.35	54.55	261.67	4.72	6.485	4.796	6.98	4.12
11 x 7 x 25.5	36.92	55.13	60.24	324.75	4.56	5.890	5.391	10.86	6.87
22.95	33.38	50.93	58.66	307.56	4.60	6.038	5.243	9.82	6.19
20.4	29.75	46.44	57.03	288.77	4.63	6.218	5.063	8.75	5.50
17.85	26.15	41.79	55.39	268.70	4.65	6.430	4.851	7.69	4.82
15.3	22.47	36.80	53.68	246.30	4.66	6.693	4.588	6.61	4.12
11 x 6 x 25.5	34.80	49.73	59.03	304.48	4.51	6.123	5.158	10.23	6.87
22.95	31.46	45.95	57.50	288.13	4.54	6.270	5.011	9.25	6.19
20.4	28.05	41.92	55.91	270.27	4.56	6.447	4.834	8.25	5.50
17.85	24.66	37.73	54.32	251.18	4.58	6.657	4.624	7.25	4.82
15.3	21.20	33.24	52.65	229.89	4.58	6.915	4.366	6.23	4.12
11 x 5 x 25.5	32.67	44.30	57.58	282.44	4.44	6.376	4.905	9.61	6.87
22.95	29.55	40.96	56.11	267.08	4.46	6.521	4.760	8.69	6.19
20.4	26.35	37.38	54.58	250.28	4.48	6.695	4.586	7.75	5.50
17.85	23.17	33.67	53.04	232.33	4.48	6.901	4.380	6.82	4.82
15.3	19.92	29.68	51.43	212.31	4.48	7.153	4.128	5.86	4.12
11 x 4 x 25.5	30.55	38.84	55.82	258.39	4.34	6.652	4.629	8.98	6.87
22.95	27.64	35.94	54.42	244.19	4.36	6.794	4.487	8.13	6.19
20.4	24.65	32.83	52.96	228.64	4.37	6.964	4.317	7.25	5.50
17.85	21.69	29.59	51.49	212.00	4.37	7.164	4.117	6.38	4.82
15.3	18.65	26.11	49.95	193.44	4.35	7.409	3.872	5.48	4.12
10 x 8 x 25.5	36.92	53.68	54.47	277.96	4.22	5.178	5.103	10.86	6.25
22.95	33.38	49.61	53.15	263.80	4.26	5.318	4.963	9.82	5.63
20.4	29.75	45.25	51.78	248.25	4.29	5.486	4.795	8.75	5.00
17.85	26.15	40.72	50.39	231.54	4.32	5.686	4.595	7.69	4.38
15.3	22.47	35.85	48.95	212.77	4.33	5.934	4.347	6.61	3.75
10 x 7 x 25.5	34.80	48.79	53.58	262.53	4.19	5.381	4.900	10.23	6.25
22.95	31.46	45.10	52.29	248.93	4.22	5.520	4.761	9.25	5.63
20.4	28.05	41.14	50.95	234.00	4.24	5.688	4.593	8.25	5.00
17.85	24.66	37.03	49.59	217.96	4.26	5.886	4.395	7.25	4.38
15.3	21.20	32.62	48.18	199.96	4.27	6.131	4.150	6.23	3.75
10 x 6 x 25.5	32.67	43.87	52.52	245.75	4.14	5.602	4.679	9.61	6.25
22.95	29.55	40.56	51.27	232.82	4.16	5.740	4.541	8.69	5.63
20.4	26.35	37.02	49.96	218.61	4.18	5.906	4.375	7.75	5.00
17.85	23.17	33.33	48.65	203.35	4.20	6.101	4.180	6.82	4.38
15.3	19.92	29.37	47.27	186.24	4.19	6.341	3.940	5.86	3.75
12.75	16.69	25.24	45.86	167.38	4.17	6.631	3.650	4.91	3.13
10 x 5 x 25.5	30.55	38.93	51.25	227.45	4.07	5.843	4.438	8.98	6.25
22.95	27.64	36.01	50.04	215.30	4.09	5.979	4.302	8.13	5.63
20.4	24.65	32.88	48.78	201.94	4.10	6.141	4.140	7.25	5.00
17.85	21.69	29.62	47.51	187.60	4.11	6.333	3.948	6.38	4.38
15.3	18.65	26.12	46.18	171.51	4.10	6.567	3.714	5.48	3.75

**PROPERTIES OF
COMBINED BEAM AND PLATE
FLANGED PLATE**

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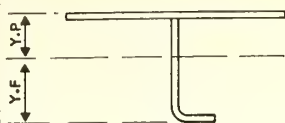


STEEL

11.47 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 4 x 25.5	28.42	33.96	49.69	207.40	3.98	6.107	4.174	8.36	6.25
22.95	25.72	31.44	48.54	196.17	3.99	6.239	4.042	7.57	5.63
20.4	22.95	28.73	47.34	183.82	4.00	6.398	3.883	6.75	5.00
17.85	20.20	25.91	46.12	170.55	4.00	6.583	3.698	5.94	4.38
15.3	17.37	22.86	44.84	155.67	3.98	6.810	3.471	5.11	3.75
9 x 6 x 25.5	30.55	38.23	46.22	194.18	3.76	5.079	4.202	8.98	5.62
20.4	24.65	32.30	44.17	173.16	3.80	5.360	3.921	7.25	4.50
15.3	18.65	25.65	41.99	147.77	3.80	5.762	3.519	5.48	3.37
10.2	12.54	18.15	39.59	155.50	3.70	6.363	2.918	3.69	2.25
9 x 5 x 25.5	28.42	33.78	45.11	179.28	3.70	5.307	3.974	8.36	5.62
20.4	22.95	28.57	43.14	159.52	3.73	5.583	3.698	6.75	4.50
15.3	17.37	22.71	41.02	135.67	3.71	5.974	3.307	5.11	3.37
10.2	11.69	16.09	38.68	105.47	3.59	6.554	2.727	3.44	2.25
9 x 4 x 25.5*	26.30	29.31	43.74	162.89	3.61	5.557	3.724	7.73	5.62
20.4*	21.25	24.83	41.86	144.64	3.63	5.826	3.455	6.25	4.50
15.3	16.10	19.77	39.83	122.61	3.60	6.203	3.078	4.73	3.37
10.2	10.84	14.03	37.56	94.81	3.46	6.757	2.524	3.19	2.25
8 x 6 x 25.5*	28.42	32.82	40.11	149.46	3.38	4.554	3.727	8.36	5.00
20.4*	22.95	27.78	38.52	133.64	3.41	4.811	3.470	6.75	4.00
15.3	17.37	22.08	36.80	114.27	3.41	5.176	3.105	5.11	3.00
10.2	11.69	15.63	34.87	89.36	3.31	5.718	2.563	3.44	2.00
8 x 5 x 25.5	26.30	28.87	39.17	137.63	3.32	4.767	3.514	7.73	5.00
20.4	21.25	24.46	37.63	122.75	3.34	5.019	3.262	6.25	4.00
15.3	16.10	19.46	35.97	104.56	3.32	5.374	2.907	4.73	3.00
10.2	10.84	13.79	34.07	81.29	3.20	5.895	2.386	3.19	2.00
8 x 4 x 25.5*	24.17	24.90	37.99	124.56	3.24	5.002	3.279	7.11	5.00
20.4*	19.55	21.13	36.52	110.83	3.25	5.246	3.035	5.75	4.00
15.3	14.82	16.83	34.92	94.06	3.22	5.587	2.694	4.36	3.00
10.2	9.99	11.95	33.07	72.69	3.08	6.083	2.198	2.94	2.00

*Indicates similarity to (L) shape



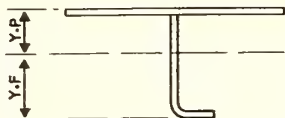
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

12.75 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 20 x 30.6	102.64	192.93	309.44	2,532.78	8.38	8.185	13.128	30.19	15.75
25.5	85.80	179.26	267.63	2,288.04	8.58	8.549	12.764	25.23	13.12
20.4	68.85	165.40	223.13	2,024.48	8.80	9.073	12.240	20.25	10.50
17.85	60.40	158.45	199.89	1,883.78	8.93	9.424	11.889	17.77	9.20
21 x 18 x 30.6	97.54	190.57	285.93	2,437.25	8.40	8.524	12.789	28.69	15.75
25.5	81.55	177.12	247.32	2,199.65	8.58	8.894	12.419	23.98	13.12
20.4	65.45	163.47	206.23	1,943.51	8.79	9.424	11.889	19.25	10.50
17.85	57.43	156.63	184.77	1,806.68	8.91	9.778	11.535	16.89	9.20
21 x 16 x 30.6	92.44	187.86	262.33	2,333.05	8.40	8.894	12.419	27.19	15.75
25.5	77.30	174.65	226.95	2,103.54	8.57	9.269	12.044	22.73	13.12
20.4	62.05	161.26	189.29	1,855.84	8.77	9.804	11.509	18.25	10.50
17.85	54.45	154.54	169.62	1,723.42	8.87	10.161	11.152	16.01	9.20
21 x 14 x 30.6	87.34	184.69	238.64	2,218.95	8.38	9.299	12.014	25.69	15.75
25.5	73.05	171.78	206.51	1,998.64	8.55	9.678	11.635	21.48	13.12
20.4	58.65	158.68	172.31	1,760.58	8.72	10.218	11.095	17.25	10.50
17.85	51.47	152.10	154.44	1,633.21	8.82	10.575	10.738	15.14	9.20
21 x 12 x 30.6	82.24	180.95	214.85	2,093.48	8.34	9.744	11.569	24.19	15.75
25.5	68.80	168.39	186.02	1,883.71	8.49	10.126	11.187	20.23	13.12
20.4	55.25	155.30	155.63	1,656.72	8.65	10.668	10.645	16.25	10.50
17.85	48.49	139.24	149.23	1,535.16	8.73	11.026	10.287	14.26	9.20
21 x 10 x 30.6	77.14	176.47	190.98	1,954.84	8.27	10.236	11.077	22.69	15.75
25.5	64.55	164.33	165.47	1,757.23	8.41	10.620	10.693	18.98	13.12
20.4	51.85	138.25	151.99	1,543.03	8.55	11.161	10.152	15.25	10.50
17.85	45.51	124.01	145.79	1,428.20	8.61	11.517	9.796	13.39	9.20
21 x 8 x 30.6	72.04	167.02	171.01	1,800.83	8.16	10.782	10.531	21.19	15.75
25.5	60.30	144.85	159.38	1,617.36	8.28	11.165	10.148	17.73	13.12
20.4	48.45	121.17	147.56	1,418.04	8.39	11.703	9.610	14.25	10.50
17.85	42.53	108.75	141.61	1,311.04	8.44	12.055	9.258	12.51	9.20
21 x 6 x 30.6	66.94	142.96	164.19	1,628.77	7.98	11,393	9.920	19.69	15.75
25.5	56.05	124.18	153.22	1,461.86	8.09	11.772	9.541	16.48	13.12
20.4	45.05	104.05	142.05	1,279.99	8.18	12.302	9.011	13.25	10.50
17.85	39.56	93.47	136.42	1,182.16	8.22	12.647	8.666	11.63	9.20
18 x 18 x 30.6	89.89	154.65	237.93	1,716.43	7.29	7.214	11.099	26.44	13.50
25.5	75.17	144.75	206.19	1,557.45	7.46	7.553	10.760	22.11	11.25
20.4	60.35	134.68	172.16	1,383.84	7.65	8.038	10.275	17.75	9.00
15.3	45.42	124.43	135.38	1,187.35	7.86	8.770	9.543	13.36	6.75
18 x 16 x 30.6	84.79	152.59	217.67	1,642.78	7.30	7.547	10.766	24.94	13.50
25.5	70.92	142.86	188.65	1,488.81	7.46	7.892	10.421	20.86	11.25
20.4	56.95	132.97	157.53	1,320.48	7.64	8.382	9.931	16.75	9.00
15.3	42.87	122.88	123.91	1,129.85	7.82	9.119	9.194	12.61	6.75
18 x 14 x 30.6	79.69	150.17	197.32	1,561.61	7.30	7.914	10.399	23.44	13.50
25.5	66.67	140.65	171.04	1,413.44	7.45	8.264	10.049	19.61	11.25
20.4	53.55	130.96	142.86	1,251.27	7.61	8.758	9.555	15.75	9.00
15.3	40.32	112.41	121.08	1,067.49	7.76	9.496	8.817	11.86	6.75
18 x 12 x 30.6	74.59	147.28	176.87	1,471.68	7.27	8.321	9.992	21.94	13.50
25.5	62.42	138.01	153.37	1,330.30	7.41	8.674	9.639	18.36	11.25
20.4	50.15	128.16	128.56	1,175.35	7.55	9.171	9.142	14.75	9.00
15.3	37.77	100.90	118.92	999.62	7.67	9.907	8.406	11.11	6.75
18 x 10 x 30.6	69.49	143.77	156.33	1,371.52	7.22	8.773	9.540	20.44	13.50
25.5	58.17	134.80	135.64	1,238.12	7.34	9.128	9.185	17.11	11.25
20.4	46.75	113.42	125.66	1,091.69	7.46	9.625	8.688	13.75	9.00
15.3	35.22	89.37	116.31	925.48	7.55	10.356	7.957	10.36	6.75



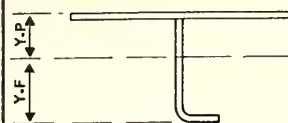
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 8 x 30.6	64.39	135.68	139.42	1,259.25	7.12	9.281	9.032	18.94	13.50
25.5	53.92	117.83	130.83	1,135.35	7.23	9.635	8.678	15.86	11.25
20.4	43.35	98.64	122.07	999.05	7.32	10.129	8.184	12.75	9.00
15.3	32.67	77.81	113.09	844.17	7.38	10.849	7.464	9.61	6.75
18 x 6 x 30.6	59.29	114.93	133.89	1,132.55	6.97	9.854	8.459	17.44	13.50
25.5	49.67	99.96	125.79	1,020.04	7.06	10.204	8.109	14.61	11.25
20.4	39.95	83.82	117.51	895.91	7.13	10.689	7.624	11.75	9.00
15.3	30.12	66.24	109.01	754.58	7.16	11.391	6.922	8.86	6.75
18 x 4 x 30.6	54.19	94.08	126.61	988.43	6.73	10.506	7.807	15.94	13.50
25.5	45.42	82.03	119.17	889.75	6.80	10.847	7.466	13.36	11.25
20.4	36.55	68.96	111.54	780.36	6.85	11.317	6.996	10.75	9.00
15.3	27.57	54.65	103.68	655.38	6.85	11.992	6.321	8.11	6.75
16 x 12 x 30.6	69.49	126.16	152.74	1,127.11	6.54	7.379	8.934	20.44	12.00
25.5	58.17	118.84	132.62	1,022.40	6.67	7.709	8.604	17.11	10.00
20.4	46.75	110.90	111.35	906.42	6.80	8.173	8.140	13.75	8.00
15.3	35.22	87.32	103.69	773.24	6.90	8.856	7.457	10.36	6.00
16 x 10 x 30.6	64.39	123.26	134.45	1,049.01	6.50	7.802	8.511	18.94	12.00
25.5	53.92	116.17	116.79	950.04	6.61	8.135	8.178	15.86	10.00
20.4	43.35	97.72	108.92	840.25	6.72	8.598	7.715	12.75	8.00
15.3	32.67	76.99	101.48	714.15	6.79	9.275	7.038	9.61	6.00
16 x 8 x 30.6	59.29	116.04	119.62	960.86	6.42	8.280	8.033	17.44	12.00
25.5	49.67	100.89	112.82	868.84	6.51	8.612	7.701	14.61	10.00
20.4	39.95	84.50	105.87	766.58	6.59	9.072	7.241	11.75	8.00
15.3	30.12	66.65	98.71	649.05	6.64	9.738	6.575	8.86	6.00
16 x 6 x 30.6	54.19	97.53	114.91	860.60	6.28	8.824	7.489	15.94	12.00
25.5	45.42	84.92	108.51	777.11	6.36	9.151	7.162	13.36	10.00
20.4	36.55	71.24	101.94	684.05	6.41	9.603	6.710	10.75	8.00
15.3	27.57	56.29	95.16	576.96	6.42	10.250	6.063	8.11	6.00
16 x 4 x 30.6	49.09	78.91	108.60	745.55	6.06	9.448	6.865	14.44	12.00
25.5	41.17	68.88	102.73	672.62	6.12	9.766	6.547	12.11	10.00
20.4	33.15	57.93	96.69	590.97	6.15	10.201	6.112	9.75	8.00
15.3	25.02	45.91	90.43	496.71	6.13	10.820	5.493	7.36	6.00
15 x 12 x 30.6	66.94	116.00	141.03	974.67	6.17	6.911	8.402	19.69	11.25
25.5	56.05	109.58	122.54	885.83	6.29	7.229	8.084	16.48	9.37
20.4	45.05	102.52	103.00	786.80	6.41	7.674	7.639	13.25	7.50
15.3	33.95	80.73	96.25	672.28	6.51	8.328	6.985	9.98	5.62
15 x 11 x 30.6	64.39	114.77	132.47	941.63	6.16	7.108	8.205	18.94	11.25
25.5	53.92	108.44	115.12	855.05	6.27	7.428	7.885	15.86	9.37
20.4	43.35	96.33	101.95	758.49	6.38	7.874	7.439	12.75	7.50
15.3	32.67	75.87	95.29	646.83	6.46	8.525	6.788	9.61	5.62
15 x 10 x 30.6	61.84	113.39	123.87	906.53	6.14	7.318	7.995	18.19	11.25
25.5	51.80	107.17	107.67	822.45	6.24	7.638	7.675	15.23	9.37
20.4	41.65	90.13	100.79	728.62	6.34	8.084	7.229	12.25	7.50
15.3	31.40	71.02	94.23	620.11	6.41	8.732	6.581	9.23	5.62
15 x 9 x 30.6	59.29	111.84	115.25	869.18	6.11	7.542	7.771	17.44	11.25
25.5	49.67	100.21	105.74	787.87	6.20	7.862	7.451	14.61	9.37
20.4	39.95	83.92	99.48	697.05	6.29	8.306	7.007	11.75	7.50
15.3	30.12	66.15	93.03	592.03	6.34	8.949	6.364	8.86	5.62
15 x 8 x 30.6	56.74	106.60	110.09	829.34	6.06	7.780	7.533	16.69	11.25
25.5	47.55	92.74	104.12	751.11	6.15	8.099	7.214	13.98	9.37
20.4	38.25	77.70	98.00	663.65	6.22	8.541	6.772	11.25	7.50
15.3	28.85	61.29	91.69	562.48	6.26	9.178	6.135	8.48	5.62



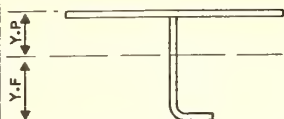
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

12.75 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT.²	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.²
15 x 7 x 30.6	54.19	97.92	108.09	786.77	6.01	8.034	7.279	15.94	11.25
25.5	45.42	85.24	102.28	711.96	6.08	8.352	6.961	13.36	9.37
20.4	36.55	71.47	96.32	628.23	6.15	8.790	6.523	10.75	7.50
15.3	27.57	56.41	90.15	531.36	6.16	9.419	5.894	8.11	5.62
15 x 6 x 30.6	51.64	89.22	105.79	741.16	5.93	8.307	7.006	15.19	11.25
25.5	43.30	77.73	100.17	670.18	6.00	8.622	6.691	12.73	9.37
20.4	34.85	65.22	94.38	590.62	6.05	9.055	6.258	10.25	7.50
15.3	26.30	51.53	88.40	498.51	6.05	9.674	5.639	7.73	5.62
15 x 5 x 30.6	49.09	80.49	103.11	692.20	5.84	8.600	6.713	14.44	11.25
25.5	41.17	70.19	97.71	625.50	5.90	8.911	6.402	12.11	9.37
20.4	33.15	58.97	92.14	550.60	5.94	9.337	5.976	9.75	7.50
15.3	25.02	46.65	86.36	463.81	5.92	9.942	5.371	7.36	5.62
15 x 4 x 30.6	46.54	71.73	99.95	639.48	5.72	8.915	6.398	13.69	11.25
25.5	39.05	62.64	94.81	577.61	5.77	9.221	6.092	11.48	9.37
20.4	31.45	52.71	89.49	507.94	5.79	9.637	5.676	9.25	7.50
15.3	23.75	41.76	83.97	427.08	5.76	10.227	5.086	6.98	5.62
14 x 10 x 30.6	59.29	103.78	113.54	776.08	5.77	6.835	7.478	17.44	10.50
25.5	49.67	98.37	98.77	705.42	5.87	7.142	7.171	14.61	8.75
20.4	39.95	82.72	92.82	626.04	5.96	7.568	6.745	11.75	7.00
15.3	30.12	65.18	87.09	533.57	6.02	8.186	6.127	8.86	5.25
14 x 9 x 30.6	56.74	102.39	105.49	743.70	5.74	7.050	7.263	16.69	10.50
25.5	47.55	91.79	97.09	675.33	5.83	7.357	6.956	13.98	8.75
20.4	38.25	76.90	91.64	598.47	5.91	7.782	6.531	11.25	7.00
15.3	28.85	60.62	86.00	508.94	5.95	8.395	5.918	8.48	5.25
14 x 8 x 30.6	54.19	97.41	100.82	709.10	5.70	7.279	7.034	15.94	10.50
25.5	45.42	84.80	95.63	643.29	5.78	7.586	6.727	13.36	8.75
20.4	36.55	71.08	90.29	569.24	5.85	8.008	6.305	10.75	7.00
15.3	27.57	56.06	84.77	483.00	5.88	8.615	5.698	8.11	5.25
14 x 7 x 30.6	51.64	89.31	99.01	672.04	5.65	7.525	6.788	15.19	10.50
25.5	43.30	77.79	93.95	609.10	5.72	7.830	6.483	12.73	8.75
20.4	34.85	65.24	88.75	538.20	5.78	8.249	6.064	10.25	7.00
15.3	26.30	51.50	83.36	455.62	5.79	8.847	5.466	7.73	5.25
14 x 6 x 30.6	49.09	81.17	96.91	632.25	5.58	7.789	6.524	14.44	10.50
25.5	41.17	70.76	92.02	572.53	5.64	8.091	6.222	12.11	8.75
20.4	33.15	59.40	86.98	505.17	5.69	8.505	5.808	9.75	7.00
15.3	25.02	46.93	81.74	426.70	5.68	9.093	5.220	7.36	5.25
14 x 5 x 30.6	46.54	73.01	94.46	589.40	5.49	8.073	6.240	13.69	10.50
25.5	39.05	63.71	89.76	533.33	5.54	8.371	5.942	11.48	8.75
20.4	31.45	53.54	84.90	469.97	5.57	8.778	5.535	9.25	7.00
15.3	23.75	42.35	79.85	396.09	5.55	9.352	4.961	6.98	5.25
14 x 4 x 30.6	43.99	64.81	91.55	543.15	5.37	8.380	5.933	12.94	10.50
25.5	36.92	56.64	87.08	491.20	5.42	8.672	5.641	10.86	8.75
20.4	29.75	47.67	82.45	432.35	5.44	9.069	5.244	8.75	7.00
15.3	22.47	37.77	77.61	363.64	5.40	9.628	4.685	6.61	5.25
13 x 9 x 30.6	54.19	93.20	95.98	629.51	5.37	6.559	6.754	15.94	9.75
25.5	45.42	83.59	88.64	572.73	5.46	6.852	6.461	13.36	8.12
20.4	36.55	70.06	83.95	508.43	5.53	7.257	6.056	10.75	6.50
15.3	27.57	55.24	79.08	432.94	5.56	7.838	5.475	8.11	4.87
13 x 8 x 30.6	51.64	88.48	91.79	599.77	5.34	6.779	6.534	15.19	9.75
25.5	43.30	77.08	87.33	545.09	5.41	7.071	6.242	12.73	8.12
20.4	34.85	64.64	82.74	483.11	5.47	7.474	5.839	10.25	6.50
15.3	26.30	50.99	77.96	410.39	5.49	8.049	5.264	7.73	4.87



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

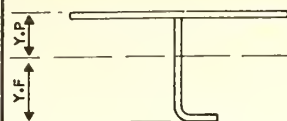
STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
13 x 7 x 30.6	49.09	80.94	90.17	567.84	5.29	7.015	6.298	14.44	9.75
25.5	41.17	70.56	85.83	515.52	5.35	7.306	6.007	12.11	8.12
20.4	33.15	59.21	81.34	456.18	5.40	7.705	5.608	9.75	6.50
15.3	25.02	46.73	76.67	386.55	5.40	8.272	5.041	7.36	4.87
13 x 6 x 30.6	46.54	73.38	88.28	533.47	5.22	7.270	6.043	13.69	9.75
25.5	39.05	64.01	84.07	483.83	5.28	7.558	5.755	11.48	8.12
20.4	31.45	53.76	79.72	427.46	5.32	7.951	5.362	9.25	6.50
15.3	23.75	42.47	75.19	361.32	5.30	8.507	4.806	6.98	4.87
13 x 5 x 30.6	43.99	65.79	86.05	496.36	5.14	7.545	5.768	12.94	9.75
25.5	36.92	57.45	82.01	449.77	5.18	7.829	5.484	10.86	8.12
20.4	29.75	48.30	77.82	396.78	5.21	8.215	5.098	8.75	6.50
15.3	22.47	38.21	73.44	334.58	5.18	8.757	4.556	6.61	4.87
13 x 4 x 30.6	41.44	58.17	83.38	456.17	5.03	7.842	5.471	12.19	9.75
25.5	34.80	50.87	79.55	413.08	5.06	8.120	5.193	10.23	8.12
20.4	28.05	42.83	75.56	363.93	5.08	8.496	4.817	8.25	6.50
15.3	21.20	33.94	71.36	306.19	5.03	9.022	4.291	6.23	4.87
12 x 9 x 30.6	51.64	84.26	86.72	526.21	5.00	6.068	6.245	15.19	9.00
25.5	43.30	75.59	80.41	479.75	5.08	6.346	5.967	12.73	7.50
20.4	34.85	63.40	76.42	426.68	5.14	6.730	5.583	10.25	6.00
15.3	26.30	49.99	72.26	363.85	5.17	7.278	5.035	7.73	4.50
12 x 8 x 30.6	49.09	79.79	83.02	500.97	4.97	6.278	6.035	14.44	9.00
25.5	41.17	69.58	79.24	456.18	5.04	6.556	5.757	12.11	7.50
20.4	33.15	58.38	75.33	405.01	5.09	6.937	5.376	9.75	6.00
15.3	25.02	46.06	71.25	344.46	5.10	7.479	4.834	7.36	4.50
12 x 7 x 30.6	46.54	72.84	81.57	473.80	4.92	6.505	5.808	13.69	9.00
25.5	39.05	63.55	77.89	430.92	4.98	6.781	5.532	11.48	7.50
20.4	31.45	53.35	74.08	381.90	5.02	7.158	5.155	9.25	6.00
15.3	23.75	42.12	70.09	323.93	5.02	7.691	4.622	6.98	4.50
12 x 6 x 30.6	43.99	65.86	79.88	444.46	4.86	6.749	5.564	12.94	9.00
25.5	36.92	57.50	76.32	403.77	4.91	7.022	5.291	10.86	7.50
20.4	29.75	48.31	72.62	357.21	4.94	7.394	4.919	8.75	6.00
15.3	22.47	38.17	68.73	302.18	4.92	7.917	4.396	6.61	4.50
12 x 5 x 30.6	41.44	58.84	77.87	412.69	4.78	7.014	5.299	12.19	9.00
25.5	34.80	51.43	74.45	374.52	4.82	7.283	5.030	10.23	7.50
20.4	28.05	43.26	70.89	330.78	4.84	7.647	4.666	8.25	6.00
15.3	21.20	34.22	67.13	279.08	4.80	8.156	4.157	6.23	4.50
12 x 4 x 30.6	38.89	51.80	75.45	378.17	4.67	7.301	5.012	11.44	9.00
25.5	32.67	45.34	72.21	342.91	4.71	7.564	4.749	9.61	7.50
20.4	26.35	38.19	68.81	302.41	4.71	7.918	4.395	7.75	6.00
15.3	19.92	30.26	65.22	254.50	4.66	8.411	3.902	5.86	4.50
11 x 8 x 25.5	39.05	62.30	71.35	376.26	4.66	6.040	5.273	11.48	6.87
22.95	35.29	57.47	69.75	356.45	4.68	6.202	5.111	10.38	6.19
20.4	31.45	52.31	68.08	334.67	4.70	6.397	4.916	9.25	5.50
17.85	27.64	46.98	66.41	311.27	4.71	6.626	4.687	8.13	4.82
15.3	23.75	41.28	64.65	285.00	4.71	6.904	4.409	6.98	4.12
11 x 7 x 25.5	36.92	56.76	70.16	354.98	4.61	6.253	5.060	10.86	6.87
22.95	33.38	52.38	68.59	335.98	4.63	6.415	4.898	9.82	6.19
20.4	29.75	47.69	66.97	315.12	4.64	6.608	4.705	8.75	5.50
17.85	26.15	42.84	65.33	292.70	4.64	6.832	4.481	7.69	4.82
15.3	22.47	37.65	63.60	267.57	4.63	7.106	4.207	6.61	4.12
11 x 6 x 25.5	34.80	51.21	68.76	332.04	4.54	6.484	4.829	10.23	6.87
22.95	31.46	47.27	67.24	314.00	4.56	6.643	4.670	9.25	6.19
20.4	28.05	43.06	65.66	294.18	4.56	6.833	4.480	8.25	5.50

PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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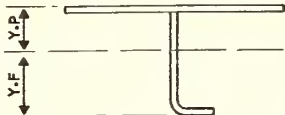


STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
11 x 6 x 17.85	24.66	38.69	64.06	272.90	4.56	7.053	4.260	7.25	4.82
15.3	21.20	34.02	62.38	249.06	4.53	7.320	3.993	6.23	4.12
11 x 5 x 25.5	32.67	45.63	67.09	307.26	4.45	6.733	4.580	9.61	6.87
22.95	29.55	42.14	65.62	290.32	4.46	6.889	4.424	8.69	6.19
20.4	26.35	38.41	64.10	271.71	4.47	7.074	4.239	7.75	5.50
17.85	23.17	34.54	62.55	251.73	4.45	7.289	4.024	6.82	4.82
15.3	19.92	30.39	60.93	229.37	4.42	7.548	3.765	5.86	4.12
11 x 4 x 25.5	30.55	40.04	65.05	280.39	4.34	7.003	4.310	8.98	6.87
22.95	27.64	37.00	63.66	264.74	4.35	7.155	4.158	8.13	6.19
20.4	24.65	33.75	62.21	247.53	4.34	7.334	3.979	7.25	5.50
17.85	21.69	30.37	60.73	229.05	4.32	7.541	3.772	6.38	4.82
15.3	18.65	26.74	59.17	208.38	4.28	7.791	3.522	5.48	4.12
10 x 8 x 25.5	36.92	55.24	63.66	305.01	4.27	5.522	4.791	10.86	6.25
22.95	33.38	50.98	62.35	289.25	4.29	5.674	4.639	9.82	5.63
20.4	29.75	46.43	60.98	271.84	4.31	5.855	4.458	8.75	5.00
17.85	26.15	41.70	59.60	253.04	4.32	6.067	4.246	7.69	4.38
15.3	22.47	36.65	58.14	231.84	4.31	6.326	3.987	6.61	3.75
10 x 7 x 25.5	34.80	50.21	62.62	287.37	4.22	5.724	4.589	10.23	6.25
22.95	31.46	46.35	61.34	272.26	4.24	5.874	4.439	9.25	5.63
20.4	28.05	42.22	60.00	255.57	4.25	6.054	4.259	8.25	5.00
17.85	24.66	37.93	58.65	237.55	4.25	6.262	4.051	7.25	4.38
15.3	21.20	33.34	57.22	217.26	4.24	6.516	3.797	6.23	3.75
10 x 6 x 25.5	32.67	45.15	61.39	268.31	4.16	5.942	4.371	9.61	6.25
22.95	29.55	41.70	60.14	253.95	4.18	6.091	4.222	8.69	5.63
20.4	26.35	37.99	58.84	238.10	4.18	6.267	4.046	7.75	5.00
17.85	23.17	34.15	57.52	221.00	4.17	6.471	3.842	6.82	4.38
15.3	19.92	30.03	56.12	201.76	4.15	6.718	3.595	5.86	3.75
10 x 5 x 25.5	30.55	40.08	59.91	247.65	4.08	6.179	4.134	8.98	6.25
22.95	27.64	37.03	58.71	234.17	4.09	6.324	3.989	8.13	5.63
20.4	24.65	33.76	57.45	219.30	4.09	6.496	3.817	7.25	5.00
17.85	21.69	30.36	56.17	203.26	4.07	6.694	3.619	6.38	4.38
15.3	18.65	26.72	54.81	185.24	4.04	6.934	3.379	5.48	3.75
10 x 4 x 25.5	28.42	34.98	58.09	225.17	3.98	6.437	3.876	8.36	6.25
22.95	25.72	32.35	56.95	212.74	3.98	6.577	3.736	7.57	5.63
20.4	22.95	29.51	55.75	199.01	3.97	6.743	3.570	6.75	5.00
17.85	20.20	26.56	54.52	184.20	3.95	6.934	3.379	5.94	4.38
15.3	17.37	23.39	53.21	167.58	3.91	7.164	3.149	5.11	3.75
9 x 6 x 25.5	30.55	39.33	54.21	212.27	3.78	5.397	3.916	8.98	5.62
20.4	24.65	33.13	52.17	188.70	3.79	5.696	3.617	7.25	4.50
15.3	18.65	26.20	49.96	160.07	3.75	6.109	3.204	5.48	3.37
10.2	12.54	18.45	47.42	123.72	3.60	6.704	2.609	3.69	2.25
9 x 5 x 25.5	28.42	34.76	52.91	195.38	3.70	5.620	3.693	8.36	5.62
20.4	22.95	29.31	50.94	173.27	3.70	5.911	3.402	6.75	4.50
15.3	17.37	23.21	48.79	146.47	3.65	6.311	3.002	5.11	3.37
10.2	11.69	16.37	46.30	112.61	3.48	6.881	2.432	3.44	2.25
9 x 4 x 25.5*	26.30	30.17	51.30	176.94	3.61	5.864	3.449	7.73	5.62
20.4*	21.25	25.48	49.42	156.57	3.59	6.145	3.168	6.25	4.50
15.3	16.10	20.21	47.35	131.90	3.53	6.527	2.786	4.73	3.37
10.2	10.84	14.28	44.92	100.83	3.34	7.067	2.246	3.19	2.25
8 x 6 x 25.5*	28.42	33.74	47.21	163.59	3.39	4.848	3.465	8.36	5.00
20.4*	22.95	28.47	45.63	145.72	3.40	5.119	3.194	6.75	4.00
15.3	17.37	22.53	43.88	123.77	3.36	5.492	2.821	5.11	3.00
10.2	11.69	15.87	41.80	95.65	3.20	6.025	2.288	3.44	2.00

*Indicates similarity to (L) shape



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

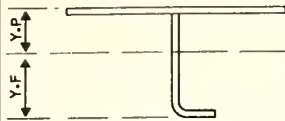
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STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
8 x 5 x 25.5	26.30	29.69	46.10	150.12	3.32	5.056	3.257	7.73	5.00
20.4	21.25	25.07	44.56	133.37	3.32	5.320	2.993	6.25	4.00
15.3	16.10	19.87	42.85	112.84	3.26	5.680	2.633	4.73	3.00
10.2	10.84	14.01	40.79	86.70	3.09	6.188	2.125	3.19	2.00
8 x 4 x 25.5*	24.17	25.61	44.70	135.36	3.23	5.285	3.028	7.11	5.00
20.4*	19.55	21.66	43.23	119.95	3.21	5.538	2.775	5.75	4.00
15.3	14.82	17.19	41.57	101.10	3.14	5.881	2.432	4.36	3.00
10.2	9.99	12.15	39.55	77.25	2.96	6.360	1.953	2.94	2.00

*Indicates similarity to (L) shape



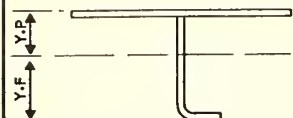
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 20 x 30.6	102.64	214.79	317.47	2,734.44	8.56	8.613	12.731	30.19	15.75
25.5	85.80	201.19	274.41	2,477.63	8.75	9.029	12.315	25.23	13.12
20.4	68.85	187.39	228.50	2,197.49	8.96	9.617	11.727	20.25	10.50
17.85	60.40	180.46	204.52	2,046.20	9.07	10.005	11.339	17.77	9.20
21 x 18 x 30.6	97.54	212.21	293.39	2,628.30	8.57	8.958	12.386	28.69	15.75
25.5	81.55	198.82	253.61	2,378.79	8.75	9.380	11.964	23.98	13.12
20.4	65.45	185.23	211.22	2,106.40	8.94	9.972	11.372	19.25	10.50
17.85	57.43	178.41	189.07	1,959.23	9.04	10.362	10.982	16.89	9.20
21 x 16 x 30.6	92.44	209.23	269.22	2,512.88	8.56	9.334	12.010	27.19	15.75
25.5	77.30	196.10	232.77	2,271.68	8.73	9.759	11.585	22.73	13.12
20.4	62.05	182.76	193.91	2,008.12	8.90	10.356	10.988	18.25	10.50
17.85	54.45	173.60	176.05	1,865.67	8.98	10.747	10.597	16.01	9.20
21 x 14 x 30.6	87.34	205.77	244.97	2,386.91	8.53	9.744	11.600	25.69	15.75
25.5	73.05	192.92	211.86	2,155.21	8.68	10.173	11.171	21.48	13.12
20.4	58.65	176.56	179.87	1,901.78	8.84	10.771	10.573	17.25	10.50
17.85	51.47	158.11	173.31	1,764.74	8.91	11.162	10.182	15.14	9.20
21 x 12 x 30.6	82.24	201.67	220.63	2,248.87	8.48	10.193	11.151	24.19	15.75
25.5	68.80	189.18	190.91	2,028.08	8.61	10.623	10.721	20.23	13.12
20.4	55.25	159.19	176.47	1,786.33	8.75	11.222	10.122	16.25	10.50
17.85	48.49	142.59	170.08	1,655.54	8.80	11.610	9.734	14.26	9.20
21 x 10 x 30.6	77.14	196.21	196.77	2,096.93	8.39	10.687	10.657	22.69	15.75
25.5	64.55	169.89	184.70	1,888.78	8.51	11.118	10.226	18.98	13.12
20.4	51.85	141.78	172.41	1,660.54	8.62	11.712	9.632	15.25	10.50
17.85	45.51	127.05	166.22	1,536.99	8.66	12.097	9.247	13.39	9.20
21 x 8 x 30.6	72.04	171.70	190.79	1,928.88	8.26	11.234	10.110	21.19	15.75
25.5	60.30	148.82	179.24	1,735.46	8.36	11.661	9.683	17.73	13.12
20.4	48.45	124.33	167.46	1,522.98	8.45	12.249	9.095	14.25	10.50
17.85	42.53	111.49	161.52	1,407.86	8.47	12.628	8.716	12.51	9.20
21 x 6 x 30.6	66.94	147.10	183.34	1,742.02	8.06	11.842	9.502	19.69	15.75
25.5	56.05	127.69	172.43	1,565.88	8.15	12.263	9.081	16.48	13.12
20.4	45.05	106.85	161.31	1,371.90	8.21	12.839	8.505	13.25	10.50
17.85	39.56	95.90	155.69	1,266.65	8.22	13.208	8.136	11.63	9.20
18 x 18 x 30.6	89.89	173.36	244.19	1,859.76	7.45	7.616	10.728	26.44	13.50
25.5	75.17	163.52	211.40	1,691.35	7.61	8.001	10.343	22.11	11.25
20.4	60.35	153.51	176.22	1,504.94	7.78	8.540	9.804	17.75	9.00
15.3	45.42	138.23	143.27	1,290.54	7.94	9.336	9.008	13.36	6.75
18 x 16 x 30.6	84.79	171.08	223.42	1,777.35	7.45	7.955	10.389	24.94	13.50
25.5	70.92	161.42	193.44	1,614.12	7.60	8.344	10.000	20.86	11.25
20.4	56.95	151.57	161.27	1,433.31	7.75	8.888	9.456	16.75	9.00
15.3	42.87	126.53	141.51	1,225.37	7.88	9.685	8.659	12.61	6.75
18 x 14 x 30.6	79.69	168.41	202.57	1,686.86	7.43	8.327	10.017	23.44	13.50
25.5	66.67	158.95	175.41	1,529.67	7.57	8.720	9.624	19.61	11.25
20.4	53.55	146.28	149.30	1,355.41	7.70	9.266	9.078	15.75	9.00
15.3	40.32	114.81	139.43	1,155.04	7.81	10.060	8.284	11.86	6.75
18 x 12 x 30.6	74.59	165.22	181.62	1,587.03	7.39	8.738	9.606	21.94	13.50
25.5	62.42	156.00	157.33	1,436.93	7.51	9.133	9.211	18.36	11.25
20.4	50.15	131.26	146.60	1,270.38	7.63	9.678	8.666	14.75	9.00
15.3	37.77	103.08	136.97	1,078.92	7.70	10.467	7.877	11.11	6.75
18 x 10 x 30.6	69.49	160.58	161.34	1,476.33	7.32	9.194	9.150	20.44	13.50
25.5	58.17	139.19	152.43	1,334.61	7.42	9.589	8.755	17.11	11.25
20.4	46.75	116.20	143.33	1,177.20	7.51	10.131	8.213	13.75	9.00
15.3	35.22	91.33	133.98	996.25	7.55	10.908	7.436	10.36	6.75



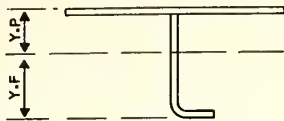
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 8 x 30.6	64.39	139.44	156.54	1,352.88	7.21	9.702	8.642	18.94	13.50
25.5	53.92	120.98	148.01	1,221.16	7.29	10.094	8.250	15.86	11.25
20.4	43.35	101.11	139.28	1,074.64	7.36	10.628	7.716	12.75	9.00
15.3	32.67	79.56	130.30	906.17	7.36	11.390	6.954	9.61	6.75
18 x 6 x 30.6	59.29	118.22	150.44	1,214.35	7.03	10.272	8.072	17.44	13.50
25.5	49.67	102.72	142.40	1,094.64	7.10	10.657	7.687	14.61	11.25
20.4	39.95	85.98	134.15	961.19	7.14	11.179	7.165	11.75	9.00
15.3	30.12	67.78	125.64	807.62	7.11	11.916	6.428	8.86	6.75
18 x 4 x 30.6	54.19	96.90	142.41	1,057.78	6.78	10.916	7.428	15.94	13.50
25.5	45.42	84.39	135.03	952.68	6.82	11.289	7.055	13.36	11.25
20.4	36.55	70.82	127.43	835.04	6.84	11.791	6.553	10.75	9.00
15.3	27.57	55.97	119.56	699.36	6.78	12.494	5.850	8.11	6.75
16 x 12 x 30.6	69.49	142.21	156.83	1,218.95	6.65	7.773	8.571	20.44	12.00
25.5	58.17	134.94	135.99	1,106.99	6.76	8.140	8.204	17.11	10.00
20.4	46.75	113.51	127.49	981.42	6.86	8.646	7.698	13.75	8.00
15.3	35.22	89.12	119.83	835.33	6.92	9.373	6.971	10.36	6.00
16 x 10 x 30.6	64.39	138.08	138.98	1,132.06	6.59	8.199	8.145	18.94	12.00
25.5	53.92	119.79	131.94	1,026.18	6.69	8.567	7.777	15.86	10.00
20.4	43.35	100.05	124.73	907.35	6.76	9.069	7.275	12.75	8.00
15.3	32.67	78.61	117.28	769.21	6.78	9.785	6.559	9.61	6.00
16 x 8 x 30.6	59.29	119.23	134.94	1,034.56	6.49	8.677	7.667	17.44	12.00
25.5	49.67	103.53	128.19	936.07	6.57	9.042	7.302	14.61	10.00
20.4	39.95	86.55	121.26	825.42	6.62	9.537	6.807	11.75	8.00
15.3	30.12	68.08	114.09	696.86	6.61	10.236	6.108	8.86	6.00
16 x 6 x 30.6	54.19	100.28	129.71	924.37	6.33	9.218	7.126	15.94	12.00
25.5	45.42	87.20	123.35	834.96	6.39	9.575	6.769	13.36	10.00
20.4	36.55	73.01	116.81	734.32	6.41	10.057	6.287	10.75	8.00
15.3	27.57	57.53	110.01	617.39	6.37	10.732	5.612	8.11	6.00
16 x 4 x 30.6	49.09	81.24	122.70	798.85	6.09	9.833	6.511	14.44	12.00
25.5	41.17	70.81	116.88	720.70	6.13	10.178	6.166	12.11	10.00
20.4	33.15	59.44	110.86	632.40	6.13	10.639	5.705	9.75	8.00
15.3	25.02	46.96	104.57	529.67	6.05	11.279	5.065	7.36	6.00
15 x 12 x 30.6	66.94	131.10	144.79	1,055.72	6.28	7.291	8.053	19.69	11.25
25.5	56.05	124.72	125.63	960.33	6.38	7.644	7.700	16.48	9.37
20.4	45.05	104.89	118.18	852.68	6.47	8.129	7.215	13.25	7.50
15.3	33.95	82.36	111.42	726.61	6.52	8.823	6.521	9.98	5.62
15 x 11 x 30.6	64.39	129.72	136.01	1,018.78	6.26	7.490	7.854	18.94	11.25
25.5	53.92	118.03	123.44	925.80	6.35	7.844	7.500	15.86	9.37
20.4	43.35	98.57	116.99	820.84	6.43	8.327	7.017	12.75	7.50
15.3	32.67	77.41	110.32	698.01	6.46	9.017	6.327	9.61	5.62
15 x 10 x 30.6	61.84	127.20	128.18	979.64	6.22	7.701	7.643	18.19	11.25
25.5	51.80	110.41	122.00	889.33	6.31	8.055	7.289	15.23	9.37
20.4	41.65	92.24	115.66	787.37	6.38	8.536	6.808	12.25	7.50
15.3	31.40	72.47	109.08	668.10	6.40	9.219	6.125	9.23	5.62
15 x 9 x 30.6	59.29	118.37	126.46	938.12	6.18	7.925	7.419	17.44	11.25
25.5	49.67	102.78	120.40	850.77	6.26	8.278	7.066	14.61	9.37
20.4	39.95	85.90	114.16	752.12	6.32	8.756	6.588	11.75	7.50
15.3	30.12	67.52	107.70	636.79	6.32	9.432	5.912	8.86	5.62
15 x 8 x 30.6	56.74	109.51	124.50	893.98	6.13	8.163	7.181	16.69	11.25
25.5	47.55	95.13	118.58	809.92	6.20	8.514	6.830	13.98	9.37
20.4	38.25	79.55	112.48	714.95	6.24	8.988	6.356	11.25	7.50
15.3	28.85	62.56	106.15	603.97	6.23	9.654	5.690	8.48	5.62



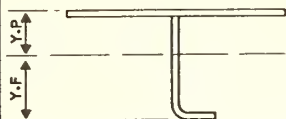
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

14.02 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	100.63	122.27	846.97	6.06	8.417	6.927	15.94	11.25
25.5	45.42	87.47	116.50	766.58	6.12	8.764	6.580	13.36	9.37
20.4	36.55	73.19	110.56	675.69	6.15	9.232	6.112	10.75	7.50
15.3	27.57	57.60	104.37	569.53	6.12	9.887	5.457	8.11	5.62
15 x 6 x 30.6	51.64	91.72	119.70	796.80	5.98	8.688	6.656	15.19	11.25
25.5	43.30	79.79	114.12	720.51	6.03	9.030	6.314	12.73	9.37
20.4	34.85	66.82	108.36	634.18	6.05	9.491	5.853	10.25	7.50
15.3	26.30	52.64	102.34	533.35	6.00	10.133	5.211	7.73	5.62
15 x 5 x 30.6	49.09	82.78	116.72	743.13	5.87	8.977	6.367	14.44	11.25
25.5	41.17	72.09	111.35	671.44	5.91	9.314	6.030	12.11	9.37
20.4	33.15	60.44	105.80	590.20	5.92	9.766	5.578	9.75	7.50
15.3	25.02	47.67	99.99	495.30	5.85	10.391	4.953	7.36	5.62
15 x 4 x 30.6	46.54	73.82	113.20	685.60	5.74	9.287	6.057	13.69	11.25
25.5	39.05	64.37	108.10	619.08	5.77	9.617	5.727	11.48	9.37
20.4	31.45	54.05	102.80	543.53	5.77	10.057	5.287	9.25	7.50
15.3	23.75	42.69	97.23	455.22	5.69	10.662	4.682	6.98	5.62
14 x 10 x 30.6	59.29	116.58	117.63	839.87	5.85	7.204	7.140	17.44	10.50
25.5	49.67	101.25	112.27	763.64	5.93	7.542	6.802	14.61	8.75
20.4	39.95	84.61	106.74	677.02	5.99	8.001	6.343	11.75	7.00
15.3	30.12	66.47	100.99	575.02	6.00	8.650	5.694	8.86	5.25
14 x 9 x 30.6	56.74	108.33	116.08	803.75	5.81	7.420	6.924	16.69	10.50
25.5	47.55	94.12	110.81	729.99	5.88	7.756	6.588	13.98	8.75
20.4	38.25	78.68	105.38	646.15	5.93	8.212	6.132	11.25	7.00
15.3	28.85	61.84	99.73	547.51	5.93	8.854	5.490	8.48	5.25
14 x 8 x 30.6	54.19	100.05	114.31	765.29	5.76	7.649	6.695	15.94	10.50
25.5	45.42	86.96	109.16	694.28	5.83	7.984	6.360	13.36	8.75
20.4	36.55	72.73	103.84	613.55	5.86	8.436	5.908	10.75	7.00
15.3	27.57	57.20	98.30	518.65	5.84	9.068	5.276	8.11	5.25
14 x 7 x 30.6	51.64	91.75	112.28	724.23	5.70	7.894	6.450	15.19	10.50
25.5	43.30	79.79	107.27	656.32	5.75	8.225	6.119	12.73	8.75
20.4	34.85	66.78	102.08	579.07	5.78	8.671	5.673	10.25	7.00
15.3	26.30	52.55	96.66	488.33	5.74	9.292	5.052	7.73	5.25
14 x 6 x 30.6	49.09	83.42	109.93	680.32	5.62	8.156	6.188	14.44	10.50
25.5	41.17	72.60	105.08	615.89	5.66	8.483	5.861	12.11	8.75
20.4	33.15	60.82	100.05	542.55	5.67	8.921	5.423	9.75	7.00
15.3	25.02	47.90	94.78	456.43	5.62	9.528	4.816	7.36	5.25
14 x 5 x 30.6	46.54	75.06	107.19	633.25	5.52	8.436	5.908	13.69	10.50
25.5	39.05	65.40	102.53	572.75	5.55	8.758	5.586	11.48	8.75
20.4	31.45	54.84	97.68	503.80	5.55	9.187	5.157	9.25	7.00
15.3	23.75	43.25	92.58	422.83	5.48	9.777	4.567	6.98	5.25
14 x 4 x 30.6	43.99	66.68	103.93	582.65	5.39	8.738	5.606	12.94	10.50
25.5	36.92	58.18	99.50	526.60	5.41	9.052	5.292	10.86	8.75
20.4	29.75	48.86	94.88	462.60	5.40	9.468	4.876	8.75	7.00
15.3	22.47	38.59	90.00	387.40	5.32	10.039	4.305	6.61	5.25
13 x 9 x 30.6	54.19	98.54	105.94	681.28	5.44	6.913	6.431	15.94	9.75
25.5	45.42	85.67	101.43	619.73	5.50	7.234	6.110	13.36	8.12
20.4	36.55	71.65	96.75	549.29	5.55	7.667	5.677	10.75	6.50
15.3	27.57	56.31	91.86	465.93	5.53	8.273	5.071	8.11	4.87
13 x 8 x 30.6	51.64	90.85	104.36	648.10	5.39	7.134	6.210	15.19	9.75
25.5	43.30	79.02	99.94	588.83	5.45	7.452	5.892	12.73	8.12
20.4	34.85	66.11	95.35	520.98	5.48	7.880	5.464	10.25	6.50
15.3	26.30	51.99	90.55	440.69	5.45	8.477	4.867	7.73	4.87



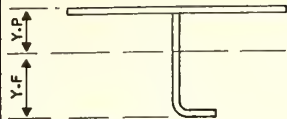
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
13 x 7 x 30.6	49.09	83.14	102.53	612.61	5.33	7.369	5.975	14.44	9.75
25.5	41.17	72.34	98.22	555.91	5.38	7.684	5.660	12.11	8.12
20.4	33.15	60.57	93.75	491.00	5.40	8.107	5.237	9.75	6.50
15.3	25.02	47.66	89.05	414.25	5.35	8.692	4.652	7.36	4.87
13 x 6 x 30.6	46.54	75.39	100.40	574.57	5.26	7.621	5.723	13.69	9.75
25.5	39.05	65.66	96.23	520.79	5.29	7.932	5.412	11.48	8.12
20.4	31.45	55.01	91.89	459.18	5.30	8.347	4.997	9.25	6.50
15.3	23.75	43.33	87.31	386.40	5.24	8.918	4.426	6.98	4.87
13 x 5 x 30.6	43.99	67.62	97.89	533.68	5.16	7.892	5.452	12.94	9.75
25.5	36.92	58.95	93.89	483.22	5.19	8.197	5.147	10.86	8.12
20.4	29.75	49.45	89.71	425.35	5.18	8.602	4.742	8.75	6.50
15.3	22.47	38.99	85.28	357.03	5.10	9.157	4.187	6.61	4.87
13 x 4 x 30.6	41.44	59.82	94.90	489.61	5.04	8.185	5.159	12.19	9.75
25.5	34.80	52.22	91.09	442.94	5.05	8.482	4.862	10.23	8.12
20.4	28.05	43.87	87.11	389.32	5.04	8.875	4.469	8.25	6.50
15.3	21.20	34.65	82.86	326.01	4.94	9.410	3.934	6.23	4.87
12 x 9 x 30.6	51.64	89.02	96.06	570.32	5.06	6.407	5.937	15.19	9.00
25.5	43.30	77.45	92.24	519.68	5.12	6.710	5.634	12.73	7.50
20.4	34.85	64.80	88.27	461.27	5.16	7.118	5.226	10.25	6.00
15.3	26.30	50.93	84.08	391.54	5.14	7.687	4.657	7.73	4.50
12 x 8 x 30.6	49.09	81.92	94.65	542.04	5.02	6.617	5.727	14.44	9.00
25.5	41.17	71.30	90.91	493.25	5.07	6.918	5.426	12.11	7.50
20.4	33.15	59.68	87.01	436.97	5.09	7.322	5.022	9.75	6.00
15.3	25.02	46.93	82.89	369.90	5.06	7.882	4.462	7.36	4.50
12 x 7 x 30.6	46.54	74.79	93.01	511.73	4.96	6.842	5.502	13.69	9.00
25.5	39.05	65.13	89.37	465.04	5.00	7.140	5.204	11.48	7.50
20.4	31.45	54.55	85.56	411.19	5.01	7.538	4.806	9.25	6.00
15.3	23.75	42.92	81.53	347.10	4.96	8.087	4.257	6.98	4.50
12 x 6 x 30.6	43.99	67.64	91.10	479.16	4.89	7.084	5.260	12.94	9.00
25.5	36.92	58.94	87.57	434.87	4.92	7.378	4.966	10.86	7.50
20.4	29.75	49.41	83.87	383.78	4.92	7.768	4.576	8.75	6.00
15.3	22.47	38.91	79.94	323.06	4.85	8.303	4.041	6.61	4.50
12 x 5 x 30.6	41.44	60.45	88.83	444.05	4.80	7.345	4.999	12.19	9.00
25.5	34.80	52.74	85.44	402.52	4.82	7.633	4.711	10.23	7.50
20.4	28.05	44.25	81.87	354.59	4.81	8.013	4.331	8.25	6.00
15.3	21.20	34.89	78.06	297.67	4.72	8.531	3.813	6.23	4.50
12 x 4 x 30.6	38.89	53.24	86.10	406.10	4.68	7.627	4.717	11.44	9.00
25.5	32.67	46.51	82.87	367.76	4.69	7.906	4.438	9.61	7.50
20.4	26.35	39.09	79.48	323.44	4.67	8.274	4.070	7.75	6.00
15.3	19.92	30.87	75.82	270.80	4.57	8.772	3.572	5.86	4.50
11 x 8 x 25.5	39.05	63.81	82.07	407.23	4.68	6.382	4.962	11.48	6.87
22.95	35.29	58.79	80.47	385.38	4.70	6.555	4.789	10.38	6.19
20.4	31.45	53.44	78.81	361.27	4.70	6.760	4.584	9.25	5.50
17.85	27.64	47.92	77.12	335.28	4.69	6.996	4.348	8.13	4.82
15.3	23.75	42.03	75.33	306.06	4.66	7.281	4.063	6.98	4.12
11 x 7 x 25.5	36.92	58.15	80.70	383.38	4.62	6.593	4.751	10.86	6.87
22.95	33.38	53.59	79.14	362.47	4.63	6.764	4.580	9.82	6.19
20.4	29.75	48.73	77.51	339.40	4.63	6.965	4.379	8.75	5.50
17.85	26.15	43.71	75.85	314.56	4.61	7.197	4.147	7.69	4.82
15.3	22.47	38.35	74.10	286.67	4.57	7.475	3.869	6.61	4.12
11 x 6 x 25.5	34.80	52.47	79.09	357.82	4.54	6.820	4.524	10.23	6.87
22.95	31.46	48.37	77.57	337.98	4.55	6.987	4.357	9.25	6.19
20.4	28.05	44.00	75.99	316.11	4.54	7.184	4.160	8.25	5.50



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

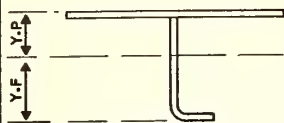
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STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
11 x 6 x 17.85	24.66	39.48	74.37	292.57	4.51	7.410	3.934	7.25	4.82
15.3	21.20	34.66	72.65	266.19	4.47	7.680	3.664	6.23	4.12
11 x 5 x 25.5	32.67	46.77	77.17	330.34	4.45	7.063	4.281	9.61	6.87
22.95	29.55	43.14	75.71	311.75	4.44	7.226	4.118	8.69	6.19
20.4	26.35	39.26	74.17	291.25	4.43	7.417	3.927	7.75	5.50
17.85	23.17	35.25	72.61	269.21	4.40	7.636	3.708	6.82	4.82
15.3	19.92	30.96	70.94	244.52	4.34	7.897	3.447	5.86	4.12
11 x 4 x 25.5	30.55	41.05	74.83	300.74	4.32	7.325	4.019	8.98	6.87
22.95	27.64	37.90	73.44	283.57	4.32	7.483	3.861	8.13	6.19
20.4	24.65	34.52	71.98	264.65	4.29	7.667	3.677	7.25	5.50
17.85	21.69	31.02	70.48	244.32	4.26	7.877	3.467	6.38	4.82
15.3	18.65	27.26	68.87	221.56	4.20	8.127	3.217	5.48	4.12
10 x 8 x 25.5	36.92	56.55	73.42	330.45	4.29	5.843	4.501	10.86	6.25
22.95	33.38	52.13	72.12	312.97	4.30	6.004	4.340	9.82	5.63
20.4	29.75	47.40	70.75	293.60	4.30	6.194	4.150	8.75	5.00
17.85	26.15	42.52	69.35	272.63	4.29	6.413	3.931	7.69	4.38
15.3	22.47	37.30	67.86	248.96	4.26	6.675	3.669	6.61	3.75
10 x 7 x 25.5	34.80	51.40	72.22	310.62	4.23	6.043	4.301	10.23	6.25
22.95	31.46	47.39	70.94	293.89	4.24	6.201	4.143	9.25	5.63
20.4	28.05	43.11	69.60	275.35	4.24	6.388	3.956	8.25	5.00
17.85	24.66	38.67	68.22	255.31	4.22	6.602	3.742	7.25	4.38
15.3	21.20	33.94	66.76	232.73	4.18	6.858	3.486	6.23	3.75
10 x 6 x 25.5	32.67	46.24	70.79	289.31	4.16	6.257	4.087	9.61	6.25
22.95	29.55	42.64	69.55	273.44	4.16	6.412	3.932	8.69	5.63
20.4	26.35	38.80	68.24	255.87	4.15	6.594	3.750	7.75	5.00
17.85	23.17	34.83	66.89	236.90	4.13	6.803	3.541	6.82	4.38
15.3	19.92	30.57	65.45	215.56	4.08	7.051	3.293	5.86	3.75
10 x 5 x 25.5	30.55	41.05	69.07	266.34	4.07	6.488	3.856	8.98	6.25
22.95	27.64	37.88	67.87	251.48	4.06	6.639	3.705	8.13	5.63
20.4	24.65	34.49	66.61	235.04	4.05	6.815	3.529	7.25	5.00
17.85	21.69	30.97	65.30	217.29	4.02	7.016	3.328	6.38	4.38
15.3	18.65	27.20	63.90	197.36	3.96	7.255	3.089	5.48	3.75
10 x 4 x 25.5	28.42	35.85	66.97	241.52	3.95	6.738	3.606	8.36	6.25
22.95	25.72	33.10	65.83	227.84	3.94	6.883	3.461	7.57	5.63
20.4	22.95	30.16	64.62	212.70	3.92	7.052	3.292	6.75	5.00
17.85	20.20	27.10	63.36	196.37	3.88	7.245	3.099	5.94	4.38
15.3	17.37	23.83	62.00	178.05	3.82	7.472	2.872	5.11	3.75
9 x 6 x 25.5	30.55	40.25	62.67	229.01	3.77	5.690	3.654	8.98	5.62
20.4	24.65	33.81	60.62	202.81	3.76	5.998	3.346	7.25	4.50
15.3	18.65	26.65	58.33	170.94	3.69	6.414	2.930	5.48	3.37
10.2	12.54	18.70	55.59	130.74	3.48	6.992	2.352	3.69	2.25
9 x 5 x 25.5	28.42	35.58	61.16	210.19	3.69	5.907	3.437	8.36	5.62
20.4	22.95	29.92	59.17	185.68	3.66	6.206	3.138	6.75	4.50
15.3	17.37	23.61	56.93	155.96	3.57	6.605	2.739	5.11	3.37
10.2	11.69	16.59	54.21	118.67	3.36	7.155	2.189	3.44	2.25
9 x 4 x 25.5*	26.30	30.90	59.28	189.78	3.58	6.143	3.201	7.73	5.62
20.4*	21.25	26.02	57.38	167.27	3.54	6.429	2.915	6.25	4.50
15.3	16.10	20.57	55.22	140.02	3.44	6.808	2.536	4.73	3.37
10.2	10.84	14.47	52.53	106.01	3.21	7.326	2.018	3.19	2.25
8 x 6 x 25.5*	28.42	34.51	54.72	176.60	3.38	5.117	3.227	8.36	5.00
20.4*	22.95	29.03	53.12	156.63	3.36	5.395	2.949	6.75	4.00
15.3	17.37	22.91	51.29	132.12	3.29	5.768	2.576	5.11	3.00
10.2	11.69	16.07	48.99	100.99	3.10	6.283	2.061	3.44	2.00

*Indicates similarity to (L) shape



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

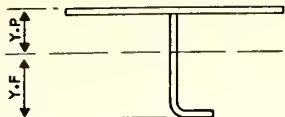
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STEEL

14.02 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
8 x 5 x 25.5	26.30	30.37	53.41	161.55	3.30	5.319	3.025	7.73	5.00
20.4	21.25	25.57	51.85	142.89	3.27	5.588	2.756	6.25	4.00
15.3	16.10	20.20	50.05	120.07	3.19	5.945	2.399	4.73	3.00
10.2	10.84	14.19	47.75	91.28	2.98	6.432	1.912	3.19	2.00
8 x 4 x 25.5*	24.17	26.21	51.76	145.17	3.20	5.539	2.805	7.11	5.00
20.4*	19.55	22.10	50.26	128.08	3.16	5.796	2.548	5.75	4.00
15.3	14.82	17.48	48.50	107.23	3.06	6.133	2.211	4.36	3.00
10.2	9.99	12.31	46.21	81.09	2.84	6.589	1.755	2.94	2.00

*Indicates similarity to (L) shape



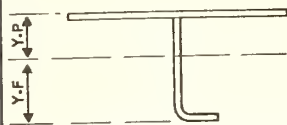
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 24 x 30.6	120.49	289.86	436.66	4,246.45	9.84	9.725	14.650	35.44	18.00
25.5	100.67	271.75	376.64	3,847.71	10.06	10.216	14.159	29.61	15.00
20.4	80.75	253.40	312.95	3,413.04	10.30	10.906	13.469	23.75	12.00
17.85	70.83	244.20	279.78	3,178.30	10.42	11.360	13.015	20.83	10.51
24 x 22 x 30.6	115.39	287.07	408.78	4,110.60	9.85	10.056	14.319	33.94	18.00
25.5	96.42	269.19	352.61	3,720.91	10.06	10.552	13.823	28.36	15.00
20.4	77.35	251.07	293.02	3,295.82	10.28	11.248	13.127	22.75	12.00
17.85	67.85	241.98	261.99	3,066.20	10.39	11.704	12.671	19.96	10.51
24 x 20 x 30.6	110.29	283.93	380.82	3,964.79	9.85	10.411	13.964	32.44	18.00
25.5	92.17	266.31	328.54	3,585.19	10.04	10.912	13.463	27.11	15.00
20.4	73.95	248.44	273.06	3,170.84	10.25	11.612	12.763	21.75	12.00
17.85	64.87	239.48	244.17	2,946.96	10.35	12.069	12.306	19.08	10.51
24 x 18 x 30.6	105.19	280.37	352.79	3,807.88	9.83	10.793	13.582	30.94	18.00
25.5	87.92	263.04	304.42	3,439.58	10.01	11.299	13.076	25.86	15.00
20.4	70.55	245.47	253.08	3,037.30	10.20	12.001	12.374	20.75	12.00
17.85	61.89	226.33	236.65	2,819.89	10.29	12.459	11.916	18.20	10.51
24 x 16 x 30.6	100.09	276.30	324.69	3,638.55	9.80	11.206	13.169	29.44	18.00
25.5	83.67	259.30	280.25	3,282.96	9.97	11.714	12.661	24.61	15.00
20.4	67.15	233.07	242.06	2,894.28	10.13	12.418	11.957	19.75	12.00
17.85	58.92	208.48	233.41	2,684.17	10.21	12.875	11.500	17.33	10.51
24 x 14 x 30.6	94.99	271.59	296.52	3,455.25	9.75	11.653	12.722	27.94	18.00
25.5	79.42	254.99	256.03	3,114.03	9.90	12.163	12.212	23.36	15.00
20.4	63.75	213.02	238.14	2,740.75	10.04	12.866	11.509	18.75	12.00
17.85	55.94	190.60	229.67	2,538.91	10.10	13.321	11.054	16.45	10.51
24 x 12 x 30.6	89.89	266.09	268.27	3,256.20	9.66	12.138	12.237	26.44	18.00
25.5	75.17	231.77	249.95	2,931.28	9.80	12.647	11.728	22.11	15.00
20.4	60.35	192.96	233.55	2,575.49	9.92	13.348	11.027	17.75	12.00
17.85	52.96	172.70	225.31	2,383.04	9.96	13.798	10.577	15.58	10.51
24 x 10 x 30.6	84.79	239.95	259.58	3,039.25	9.54	12.666	11.709	24.94	18.00
25.5	70.92	207.45	243.98	2,732.93	9.66	13.174	11.201	20.86	15.00
20.4	56.95	172.86	228.14	2,397.11	9.76	13.868	10.507	16.75	12.00
17.85	49.98	154.79	220.16	2,215.38	9.78	14.313	10.062	14.70	10.51
24 x 8 x 30.6	79.69	211.55	251.74	2,801.90	9.38	13.245	11.130	23.44	18.00
25.5	66.67	183.09	236.82	2,516.91	9.47	13.747	10.628	19.61	15.00
20.4	53.55	152.73	221.63	2,203.99	9.55	14.431	9.944	15.75	12.00
17.85	47.00	136.85	213.98	2,034.52	9.56	14.867	9.508	13.82	10.51
24 x 6 x 30.6	74.59	183.07	242.13	2,541.11	9.15	13.880	10.495	21.94	18.00
25.5	62.42	158.68	228.04	2,280.74	9.23	14.374	10.001	18.36	15.00
20.4	50.15	132.57	213.68	1,994.20	9.27	15.042	9.333	14.75	12.00
17.85	44.02	118.89	206.43	1,838.84	9.27	15.467	8.908	12.95	10.51
21 x 20 x 30.6	102.64	238.68	324.96	2,941.37	8.73	9.052	12.323	30.19	15.75
25.5	85.80	225.15	280.61	2,670.16	8.90	9.515	11.860	25.23	13.12
20.4	68.85	211.40	233.33	2,370.72	9.09	10.160	11.215	20.25	10.50
17.85	60.40	204.48	208.63	2,207.33	9.18	10.580	10.795	17.77	9.20
21 x 18 x 30.6	97.54	235.85	300.34	2,823.81	8.72	9.402	11.973	28.69	15.75
25.5	81.55	222.53	259.38	2,560.17	8.89	9.870	11.505	23.98	13.12
20.4	65.45	208.99	215.71	2,268.93	9.05	10.518	10.857	19.25	10.50
17.85	57.43	192.90	202.18	2,110.02	9.13	10.939	10.436	16.89	9.20
21 x 16 x 30.6	92.44	232.59	275.64	2,696.36	8.70	9.782	11.593	27.19	15.75
25.5	77.30	219.52	238.10	2,441.36	8.85	10.254	11.121	22.73	13.12
20.4	62.05	198.06	206.22	2,159.52	9.00	10.903	10.472	18.25	10.50
17.85	54.45	177.14	199.53	2,005.74	9.06	11.323	10.052	16.01	9.20

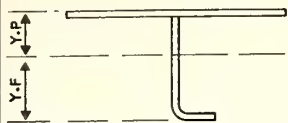


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 14 x 30.6	87.34	228.79	250.86	2,557.71	8.66	10.196	11.179	25.69	15.75
25.5	73.05	216.01	216.77	2,312.63	8.79	10.669	10.706	21.48	13.12
20.4	58.65	180.39	203.00	2,041.59	8.91	11.318	10.057	17.25	10.50
17.85	51.47	161.37	196.45	1,893.71	8.96	11.735	9.640	15.14	9.20
21 x 12 x 30.6	82.24	224.31	226.00	2,406.32	8.59	10.647	10.728	24.19	15.75
25.5	68.80	195.38	211.87	2,172.68	8.70	11.120	10.255	20.23	13.12
20.4	55.25	162.68	199.20	1,914.11	8.81	11.766	9.609	16.25	10.50
17.85	48.49	145.57	192.82	1,773.04	8.84	12.180	9.195	14.26	9.20
21 x 10 x 30.6	77.14	201.07	218.94	2,240.34	8.48	11.142	10.233	22.69	15.75
25.5	64.55	173.94	206.92	2,019.97	8.58	11.613	9.762	18.98	13.12
20.4	51.85	144.94	194.67	1,775.87	8.66	12.252	9.123	15.25	10.50
17.85	45.51	129.76	188.48	1,642.68	8.68	12.660	8.715	13.39	9.20
21 x 8 x 30.6	72.04	176.05	212.39	2,057.56	8.33	11.687	9.688	21.19	15.75
25.5	60.30	152.45	200.89	1,852.68	8.41	12.153	9.222	17.73	13.12
20.4	48.45	127.17	189.14	1,625.45	8.46	12.781	8.594	14.25	10.50
17.85	42.53	113.92	183.21	1,501.42	8.47	13.180	8.195	12.51	9.20
21 x 6 x 30.6	66.94	150.95	204.23	1,855.30	8.12	12.291	9.084	19.69	15.75
25.5	56.05	130.91	193.38	1,668.62	8.18	12.746	8.629	16.48	13.12
20.4	45.05	109.37	182.28	1,461.15	8.21	13.359	8.016	13.25	10.50
17.85	39.56	98.06	176.66	1,347.82	8.19	13.746	7.629	11.63	9.20
18 x 18 x 30.6	89.89	193.80	249.95	2,005.81	7.58	8.025	10.350	26.44	13.50
25.5	75.17	184.02	216.12	1,826.29	7.73	8.450	9.925	22.11	11.25
20.4	60.35	174.04	179.83	1,625.15	7.88	9.037	9.338	17.75	9.00
15.3	45.42	140.70	163.81	1,390.78	7.99	9.885	8.490	13.36	6.75
18 x 16 x 30.6	84.79	191.28	228.71	1,914.02	7.57	8.369	10.006	24.94	13.50
25.5	70.92	181.67	197.77	1,739.93	7.71	8.798	9.577	20.86	11.25
20.4	56.95	164.59	171.86	1,544.84	7.83	9.386	8.989	16.75	9.00
15.3	42.87	128.81	161.79	1,317.74	7.91	10.230	8.145	12.61	6.75
18 x 14 x 30.6	79.69	188.32	207.39	1,813.59	7.54	8.745	9.630	23.44	13.50
25.5	66.67	178.92	179.37	1,645.88	7.66	9.176	9.199	19.61	11.25
20.4	53.55	149.32	169.30	1,457.90	7.76	9.764	8.611	15.75	9.00
15.3	40.32	116.90	159.42	1,239.29	7.81	10.601	7.774	11.86	6.75
18 x 12 x 30.6	74.59	184.80	185.98	1,703.25	7.49	9.158	9.217	21.94	13.50
25.5	62.42	160.91	175.63	1,543.06	7.59	9.589	8.786	18.36	11.25
20.4	50.15	134.01	166.26	1,363.46	7.67	10.174	8.201	14.75	9.00
15.3	37.77	104.97	156.61	1,154.82	7.69	11.001	7.374	11.11	6.75
18 x 10 x 30.6	69.49	164.49	180.52	1,581.45	7.40	9.614	8.761	20.44	13.50
25.5	58.17	142.40	171.65	1,430.18	7.48	10.043	8.332	17.11	11.25
20.4	46.75	118.68	162.57	1,260.51	7.54	10.621	7.754	13.75	9.00
15.3	35.22	93.03	153.20	1,063.61	7.52	11.432	6.943	10.36	6.75
18 x 8 x 30.6	64.39	142.91	175.22	1,446.32	7.27	10.121	8.254	18.94	13.50
25.5	53.92	123.84	166.73	1,305.69	7.33	10.544	7.831	15.86	11.25
20.4	43.35	103.31	158.02	1,147.85	7.36	11.111	7.264	12.75	9.00
15.3	32.67	81.08	149.00	964.83	7.31	11.900	6.475	9.61	6.75
18 x 6 x 30.6	59.29	121.24	168.48	1,295.52	7.08	10.686	7.689	17.44	13.50
25.5	49.67	105.21	160.48	1,167.71	7.12	11.099	7.276	14.61	11.25
20.4	39.95	87.91	152.25	1,024.02	7.12	11.649	6.726	11.75	9.00
15.3	30.12	69.11	143.69	857.48	7.04	12.408	5.967	8.86	6.75
18 x 4 x 30.6	54.19	99.48	159.63	1,126.17	6.80	11.320	7.055	15.94	13.50
25.5	45.42	86.53	152.29	1,013.90	6.82	11.717	6.658	13.36	11.25
20.4	36.55	72.47	144.70	887.29	6.80	12.243	6.132	10.75	9.00
15.3	27.57	57.12	136.77	740.39	6.69	12.961	5.414	8.11	6.75

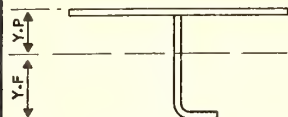


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
16 x 12 x 30.6	69.49	159.72	160.55	1,311.10	6.74	8.166	8.209	20.44	12.00
25.5	58.17	139.01	152.49	1,190.80	6.83	8.566	7.809	17.11	10.00
20.4	46.75	115.80	145.07	1,054.51	6.89	9.106	7.269	13.75	8.00
15.3	35.22	90.68	137.37	894.47	6.90	9.864	6.511	10.36	6.00
16 x 10 x 30.6	64.39	141.39	156.13	1,214.98	6.66	8.593	7.782	18.94	12.00
25.5	53.92	122.48	149.13	1,101.22	6.73	8.991	7.384	15.86	10.00
20.4	43.35	102.10	141.93	972.35	6.77	9.524	6.851	12.75	8.00
15.3	32.67	80.00	134.44	821.31	6.75	10.266	6.109	9.61	6.00
16 x 8 x 30.6	59.29	122.14	151.63	1,107.73	6.54	9.070	7.305	17.44	12.00
25.5	49.67	105.90	144.92	1,001.94	6.59	9.461	6.914	14.61	10.00
20.4	39.95	88.35	138.00	882.07	6.61	9.983	6.392	11.75	8.00
15.3	30.12	69.31	130.79	741.82	6.55	10.703	5.672	8.86	6.00
16 x 6 x 30.6	54.19	102.79	145.83	987.28	6.36	9.605	6.770	15.94	12.00
25.5	45.42	89.25	139.50	891.27	6.39	9.986	6.389	13.36	10.00
20.4	36.55	74.58	132.96	782.37	6.39	10.491	5.884	10.75	8.00
15.3	27.57	58.60	126.10	655.12	6.29	11.180	5.195	8.11	6.00
16 x 4 x 30.6	49.09	83.36	138.04	851.05	6.10	10.210	6.165	14.44	12.00
25.5	41.17	72.55	132.26	767.14	6.11	10.575	5.800	12.11	10.00
20.4	33.15	60.77	126.23	671.72	6.08	11.054	5.321	9.75	8.00
15.3	25.02	47.87	119.86	560.19	5.95	11.701	4.674	7.36	6.00
15 x 12 x 30.6	66.94	147.56	148.21	1,136.86	6.36	7.671	7.704	19.69	11.25
25.5	56.05	128.38	141.23	1,033.97	6.44	8.054	7.321	16.48	9.37
20.4	45.05	106.97	134.70	916.71	6.50	8.569	6.806	13.25	7.50
15.3	33.95	83.76	127.91	778.20	6.50	9.291	6.084	9.98	5.62
15 x 11 x 30.6	64.39	139.23	146.02	1,095.81	6.33	7.871	7.504	18.94	11.25
25.5	53.92	120.63	139.78	995.53	6.40	8.253	7.122	15.86	9.37
20.4	43.35	100.54	133.34	881.28	6.45	8.766	6.609	12.75	7.50
15.3	32.67	78.74	126.63	746.47	6.43	9.480	5.895	9.61	5.62
15 x 10 x 30.6	61.84	130.23	144.31	1,052.45	6.29	8.082	7.293	18.19	11.25
25.5	51.80	112.86	138.16	955.07	6.35	8.462	6.913	15.23	9.37
20.4	41.65	94.09	131.83	844.13	6.39	8.972	6.403	12.25	7.50
15.3	31.40	73.72	125.21	713.39	6.35	9.677	5.698	9.23	5.62
15 x 9 x 30.6	59.29	121.20	142.38	1,006.58	6.24	8.305	7.070	17.44	11.25
25.5	49.67	105.07	136.35	912.41	6.29	8.683	6.692	14.61	9.37
20.4	39.95	87.63	130.13	805.14	6.32	9.188	6.187	11.75	7.50
15.3	30.12	68.69	123.62	678.89	6.26	9.883	5.492	8.86	5.62
15 x 8 x 30.6	56.74	112.15	140.20	957.97	6.17	8.542	6.833	16.69	11.25
25.5	47.55	97.27	134.31	867.37	6.22	8.917	6.458	13.98	9.37
20.4	38.25	81.17	128.21	764.18	6.23	9.415	5.960	11.25	7.50
15.3	28.85	63.66	121.82	642.85	6.16	10.098	5.277	8.48	5.62
15 x 7 x 30.6	54.19	103.08	137.71	906.37	6.10	8.793	6.582	15.94	11.25
25.5	45.42	89.46	131.97	819.75	6.13	9.164	6.211	13.36	9.37
20.4	36.55	74.70	126.03	721.08	6.13	9.653	5.722	10.75	7.50
15.3	27.57	58.63	119.78	605.18	6.05	10.323	5.052	8.11	5.62
15 x 6 x 30.6	51.64	93.98	134.85	851.50	6.00	9.060	6.315	15.19	11.25
25.5	43.30	81.63	129.29	769.32	6.03	9.425	5.950	12.73	9.37
20.4	34.85	68.22	123.52	675.67	6.01	9.905	5.470	10.25	7.50
15.3	26.30	53.59	117.44	565.76	5.91	10.558	4.817	7.73	5.62
15 x 5 x 30.6	49.09	84.86	131.52	793.03	5.89	9.345	6.030	14.44	11.25
25.5	41.17	73.78	126.18	715.83	5.90	9.702	5.673	12.11	9.37
20.4	33.15	61.72	120.62	627.77	5.88	10.170	5.205	9.75	7.50
15.3	25.02	48.55	114.73	524.47	5.76	10.804	4.571	7.36	5.62



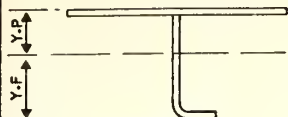
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 4 x 30.6	46.54	75.72	127.60	730.61	5.75	9.649	5.726	13.69	11.25
25.5	39.05	65.92	122.52	658.98	5.75	9.997	5.378	11.48	9.37
20.4	31.45	55.23	117.21	577.16	5.71	10.451	4.924	9.25	7.50
15.3	23.75	43.50	111.56	481.17	5.59	11.062	4.313	6.98	5.62
14 x 10 x 30.6	59.29	119.32	132.72	903.23	5.91	7.570	6.805	17.44	10.50
25.5	49.67	103.46	127.39	820.71	5.97	7.933	6.442	14.61	8.75
20.4	39.95	86.27	121.87	726.13	6.00	8.417	5.958	11.75	7.00
15.3	30.12	67.59	116.07	614.02	5.96	9.085	5.290	8.86	5.25
14 x 9 x 30.6	56.74	110.89	130.98	863.21	5.86	7.784	6.591	16.69	10.50
25.5	47.55	96.18	125.74	783.38	5.91	8.145	6.230	13.98	8.75
20.4	38.25	80.23	120.32	691.92	5.93	8.624	5.751	11.25	7.00
15.3	28.85	62.88	114.61	583.67	5.87	9.282	5.093	8.48	5.25
14 x 8 x 30.6	54.19	102.43	128.99	820.74	5.80	8.012	6.363	15.94	10.50
25.5	45.42	88.88	123.88	743.92	5.84	8.370	6.005	13.36	8.75
20.4	36.55	74.18	118.56	655.94	5.85	8.842	5.533	10.75	7.00
15.3	27.57	58.17	112.95	551.95	5.78	9.488	4.887	8.11	5.25
14 x 7 x 30.6	51.64	93.95	126.72	775.56	5.73	8.255	6.120	15.19	10.50
25.5	43.30	81.57	121.74	702.13	5.76	8.607	5.768	12.73	8.75
20.4	34.85	68.12	116.55	618.02	5.75	9.072	5.303	10.25	7.00
15.3	26.30	53.46	111.06	518.75	5.66	9.704	4.671	7.73	5.25
14 x 6 x 30.6	49.09	85.45	124.10	727.43	5.64	8.513	5.862	14.44	10.50
25.5	41.17	74.25	119.27	657.80	5.66	8.860	5.515	12.11	8.75
20.4	33.15	62.05	114.23	578.03	5.64	9.315	5.060	9.75	7.00
15.3	25.02	48.74	108.88	483.98	5.54	9.930	4.445	7.36	5.25
14 x 5 x 30.6	46.54	76.92	121.03	676.04	5.53	8.789	5.586	13.69	10.50
25.5	39.05	66.90	116.39	610.69	5.54	9.128	5.247	11.48	8.75
20.4	31.45	55.98	111.53	535.77	5.50	9.571	4.804	9.25	7.00
15.3	23.75	44.02	106.34	447.52	5.39	10.167	4.208	6.98	5.25
14 x 4 x 30.6	43.99	68.37	117.38	621.05	5.39	9.084	5.291	12.94	10.50
25.5	36.92	59.55	112.97	560.52	5.39	9.413	4.962	10.86	8.75
20.4	29.75	49.89	108.33	491.06	5.35	9.842	4.533	8.75	7.00
15.3	22.47	39.29	103.36	409.24	5.22	10.415	3.960	6.61	5.25
13 x 9 x 30.6	54.19	100.85	119.82	732.39	5.48	7.262	6.113	15.94	9.75
25.5	45.42	87.52	115.33	665.50	5.53	7.604	5.771	13.36	8.12
20.4	36.55	73.02	110.65	588.38	5.54	8.057	5.318	10.75	6.50
15.3	27.57	57.23	105.69	496.56	5.48	8.677	4.698	8.11	4.87
13 x 8 x 30.6	51.64	92.99	118.03	695.64	5.43	7.481	5.894	15.19	9.75
25.5	43.30	80.73	113.63	631.27	5.46	7.820	5.555	12.73	8.12
20.4	34.85	67.39	109.04	557.08	5.46	8.266	5.109	10.25	6.50
15.3	26.30	52.84	104.17	468.90	5.38	8.874	4.501	7.73	4.87
13 x 7 x 30.6	49.09	85.10	115.97	656.50	5.36	7.714	5.661	14.44	9.75
25.5	41.17	73.93	111.69	594.96	5.38	8.048	5.327	12.11	8.12
20.4	33.15	61.75	107.20	524.06	5.37	8.487	4.888	9.75	6.50
15.3	25.02	48.45	102.42	439.93	5.28	9.080	4.295	7.36	4.87
13 x 6 x 30.6	46.54	77.20	113.58	614.70	5.27	7.963	5.412	13.69	9.75
25.5	39.05	67.11	109.43	556.36	5.28	8.291	5.084	11.48	8.12
20.4	31.45	56.10	105.07	489.17	5.26	8.719	4.656	9.25	6.50
15.3	23.75	44.06	100.41	409.56	5.15	9.296	4.079	6.98	4.87
13 x 5 x 30.6	43.99	69.26	110.76	569.96	5.16	8.229	5.146	12.94	9.75
25.5	36.92	60.27	106.77	515.27	5.17	8.549	4.826	10.86	8.12
20.4	29.75	50.44	102.57	452.25	5.13	8.966	4.409	8.75	6.50
15.3	22.47	39.66	98.04	377.67	5.01	9.523	3.852	6.61	4.87

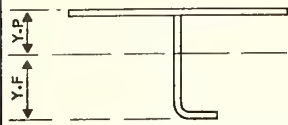


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
13 x 4 x 30.6	41.44	61.30	107.40	521.98	5.03	8.515	4.860	12.19	9.75
25.5	34.80	53.42	103.61	471.43	5.02	8.825	4.550	10.23	8.12
20.4	28.05	44.77	99.59	413.12	4.98	9.227	4.148	8.25	6.50
15.3	21.20	35.26	95.24	344.15	4.84	9.762	3.613	6.23	4.87
12 x 9 x 30.6	51.64	91.07	108.89	613.72	5.10	6.739	5.636	15.19	9.00
25.5	43.30	79.09	105.10	558.44	5.14	7.061	5.314	12.73	7.50
20.4	34.85	66.02	101.11	494.25	5.14	7.487	4.888	10.25	6.00
15.3	26.30	51.74	96.86	417.33	5.08	8.066	4.309	7.73	4.50
12 x 8 x 30.6	49.09	83.82	107.29	582.32	5.05	6.948	5.427	14.44	9.00
25.5	41.17	72.81	103.57	529.09	5.07	7.267	5.108	12.11	7.50
20.4	33.15	60.80	99.66	467.34	5.07	7.686	4.689	9.75	6.00
15.3	25.02	47.68	95.47	393.50	4.99	8.253	4.122	7.36	4.50
12 x 7 x 30.6	46.54	76.53	105.44	548.78	4.98	7.170	5.205	13.69	9.00
25.5	39.05	66.52	101.81	497.90	5.00	7.485	4.890	11.48	7.50
20.4	31.45	55.58	97.99	438.90	4.98	7.896	4.479	9.25	6.00
15.3	23.75	43.61	93.87	368.51	4.89	8.449	3.926	6.98	4.50
12 x 6 x 30.6	43.99	69.23	103.28	512.90	4.90	7.409	4.966	12.94	9.00
25.5	36.92	60.22	99.76	464.69	4.91	7.717	4.658	10.86	7.50
20.4	29.75	50.35	96.04	408.81	4.88	8.119	4.256	8.75	6.00
15.3	22.47	39.54	92.02	342.27	4.77	8.655	3.720	6.61	4.50
12 x 5 x 30.6	41.44	61.90	100.72	474.41	4.80	7.665	4.710	12.19	9.00
25.5	34.80	53.89	97.33	429.25	4.79	7.965	4.410	10.23	7.50
20.4	28.05	45.12	93.74	376.91	4.75	8.354	4.021	8.25	6.00
15.3	21.20	35.47	89.83	314.68	4.63	8.872	3.503	6.23	4.50
12 x 4 x 30.6	38.89	54.54	97.63	433.02	4.67	7.940	4.435	11.44	9.00
25.5	32.67	47.55	94.42	391.37	4.66	8.230	4.145	9.61	7.50
20.4	26.35	39.87	90.98	343.05	4.60	8.605	3.770	7.75	6.00
15.3	19.92	31.39	87.21	285.66	4.47	9.100	3.275	5.86	4.50
11 x 8 x 25.5	39.05	65.13	93.69	437.06	4.68	6.710	4.665	11.48	6.87
22.95	35.29	59.94	92.10	413.02	4.68	6.890	4.485	10.38	6.19
20.4	31.45	54.42	90.42	386.44	4.67	7.101	4.274	9.25	5.50
17.85	27.64	48.73	88.70	357.76	4.65	7.341	4.034	8.13	4.82
15.3	23.75	42.68	86.86	325.52	4.59	7.627	3.748	6.98	4.12
11 x 7 x 25.5	36.92	59.36	92.12	410.63	4.61	6.917	4.458	10.86	6.87
22.95	33.38	54.64	90.56	387.66	4.61	7.094	4.281	9.82	6.19
20.4	29.75	49.62	88.91	362.28	4.59	7.300	4.075	8.75	5.50
17.85	26.15	44.45	87.22	334.93	4.56	7.535	3.840	7.69	4.82
15.3	22.47	38.94	85.40	304.24	4.50	7.813	3.562	6.61	4.12
11 x 6 x 25.5	34.80	53.57	90.27	382.44	4.53	7.139	4.236	10.23	6.87
22.95	31.46	49.33	88.75	360.68	4.52	7.311	4.064	9.25	6.19
20.4	28.05	44.82	87.14	336.67	4.49	7.512	3.863	8.25	5.50
17.85	24.66	40.16	85.49	310.83	4.45	7.739	3.636	7.25	4.82
15.3	21.20	35.20	83.70	281.87	4.38	8.008	3.367	6.23	4.12
11 x 5 x 25.5	32.67	47.77	88.07	352.28	4.42	7.375	4.000	9.61	6.87
22.95	29.55	44.01	86.60	331.93	4.40	7.542	3.833	8.69	6.19
20.4	26.35	40.01	85.04	309.48	4.37	7.736	3.639	7.75	5.50
17.85	23.17	35.87	83.43	285.34	4.32	7.955	3.420	6.82	4.82
15.3	19.92	31.46	81.69	258.33	4.25	8.213	3.162	5.86	4.12
11 x 4 x 25.5	30.55	41.95	85.40	319.97	4.29	7.628	3.747	8.98	6.87
22.95	27.64	38.68	84.00	301.23	4.26	7.789	3.586	8.13	6.19
20.4	24.65	35.18	82.50	280.56	4.23	7.974	3.401	7.25	5.50
17.85	21.69	31.57	80.95	258.34	4.18	8.184	3.191	6.38	4.82
15.3	18.65	27.71	79.26	233.53	4.10	8.429	2.946	5.48	4.12



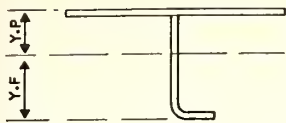
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 8 x 25.5	36.92	57.70	84.00	354.86	4.29	6.150	4.225	10.86	6.25
22.95	33.38	53.12	82.68	335.55	4.29	6.317	4.058	9.82	5.63
20.4	29.75	48.24	81.30	314.12	4.27	6.511	3.864	8.75	5.00
17.85	26.15	43.21	79.87	290.91	4.25	6.733	3.642	7.69	4.38
15.3	22.47	37.85	78.32	264.73	4.19	6.995	3.380	6.61	3.75
10 x 7 x 25.5	34.80	52.45	82.60	332.83	4.22	6.346	4.029	10.23	6.25
22.95	31.46	48.30	81.32	314.38	4.22	6.509	3.866	9.25	5.63
20.4	28.05	43.88	79.95	293.92	4.20	6.699	3.676	8.25	5.00
17.85	24.66	39.31	78.54	271.80	4.16	6.914	3.461	7.25	4.38
15.3	21.20	34.44	77.01	246.90	4.10	7.169	3.206	6.23	3.75
10 x 6 x 25.5	32.67	47.18	80.95	309.27	4.14	6.555	3.820	9.61	6.25
22.95	29.55	43.47	79.70	291.81	4.13	6.714	3.661	8.69	5.63
20.4	26.35	39.50	78.36	272.47	4.10	6.898	3.477	7.75	5.00
17.85	23.17	35.40	76.98	251.59	4.06	7.107	3.268	6.82	4.38
15.3	19.92	31.03	75.47	228.14	3.99	7.352	3.023	5.86	3.75
10 x 5 x 25.5	30.55	41.90	78.97	284.03	4.04	6.778	3.597	8.98	6.25
22.95	27.64	38.62	77.76	267.71	4.02	6.932	3.443	8.13	5.63
20.4	24.65	35.11	76.46	249.66	3.99	7.110	3.265	7.25	5.00
17.85	21.69	31.49	75.11	230.19	3.94	7.310	3.065	6.38	4.38
15.3	18.65	27.62	73.63	208.37	3.87	7.545	2.830	5.48	3.75
10 x 4 x 25.5	28.42	36.60	76.55	256.90	3.91	7.019	3.356	8.36	6.25
22.95	25.72	33.76	75.39	241.92	3.89	7.166	3.209	7.57	5.63
20.4	22.95	30.72	74.14	225.34	3.85	7.336	3.039	6.75	5.00
17.85	20.20	27.57	72.84	207.49	3.80	7.526	2.849	5.94	4.38
15.3	17.37	24.20	71.39	187.50	3.72	7.749	2.626	5.11	3.75



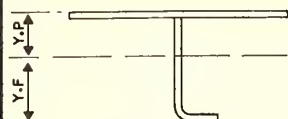
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	414.82	570.81	6,591.61	11.32	11.548	15.890	39.94	20.25
25.5	113.42	391.76	491.12	5,979.41	11.54	12.175	15.263	33.36	16.87
20.4	90.95	368.39	406.82	5,304.55	11.77	13.039	14.399	26.75	13.50
17.85	79.76	356.67	363.06	4,936.59	11.88	13.597	13.841	23.46	11.83
27 x 24 x 30.6	128.14	409.50	522.26	6,297.79	11.31	12.059	15.379	37.69	20.25
25.5	107.05	386.83	449.40	5,703.99	11.52	12.692	14.746	31.48	16.87
20.4	85.85	363.85	372.34	5,049.17	11.72	13.561	13.877	25.25	13.50
17.85	75.30	332.32	352.31	4,692.21	11.81	14.120	13.318	22.15	11.83
27 x 21 x 30.6	120.49	403.24	473.57	5,975.82	11.28	12.619	14.819	35.44	20.25
25.5	100.67	381.03	407.60	5,403.46	11.46	13.257	14.181	29.61	16.87
20.4	80.75	337.80	358.51	4,772.07	11.63	14.127	13.311	23.75	13.50
17.85	70.83	301.54	347.19	4,427.97	11.70	14.684	12.754	20.83	11.83
27 x 18 x 30.6	112.84	395.79	424.74	5,621.45	11.21	13.235	14.203	33.19	20.25
25.5	94.30	365.70	374.13	5,074.23	11.37	13.875	13.563	27.73	16.87
20.4	75.65	303.21	352.15	4,470.35	11.51	14.744	12.694	22.25	13.50
17.85	66.36	270.73	341.10	4,141.35	11.55	15.297	12.141	19.52	11.83
27 x 15 x 30.6	105.19	375.77	386.76	5,229.52	11.10	13.917	13.521	30.94	20.25
25.5	87.92	323.72	365.77	4,711.95	11.23	14.556	12.882	25.86	16.87
20.4	70.55	268.56	344.46	4,140.57	11.33	15.418	12.020	20.75	13.50
17.85	61.89	239.88	333.74	3,829.39	11.35	15.964	11.474	18.20	11.83
27 x 12 x 30.6	97.54	326.67	375.58	4,793.72	10.92	14.675	12.763	28.69	20.25
25.5	81.55	281.64	355.44	4,311.41	11.02	15.308	12.130	23.98	16.87
20.4	65.45	233.87	334.96	3,778.63	11.08	16.157	11.281	19.25	13.50
17.85	57.43	208.99	324.64	3,488.56	11.08	16.692	10.746	16.89	11.83
27 x 9 x 30.6	89.89	277.42	361.40	4,306.26	10.65	15.522	11.916	26.44	20.25
25.5	75.17	239.47	342.34	3,866.20	10.72	16.145	11.293	22.11	16.87
20.4	60.35	199.12	322.93	3,379.58	10.75	16.973	10.465	17.75	13.50
17.85	52.96	178.07	313.14	3,114.67	10.72	17.491	9.947	15.58	11.83
27 x 6 x 30.6	82.24	228.03	342.80	3,757.36	10.26	16.477	10.961	24.19	20.25
25.5	68.80	197.22	325.19	3,368.41	10.30	17.080	10.358	20.23	16.87
20.4	55.25	164.32	307.20	2,937.42	10.29	17.876	9.562	16.25	13.50
17.85	48.49	147.11	298.11	2,702.65	10.24	18.372	9.066	14.26	11.83
24 x 24 x 30.6	120.49	352.99	454.80	4,856.85	10.17	10.679	13.759	35.44	18.00
25.5	100.67	335.02	391.54	4,412.04	10.36	11.269	13.169	29.61	15.00
20.4	80.75	316.76	324.39	3,916.59	10.54	12.074	12.364	23.75	12.00
17.85	70.83	289.47	307.58	3,644.28	10.62	12.590	11.848	20.83	10.51
24 x 22 x 30.6	115.39	349.68	425.83	4,692.27	10.16	11.019	13.419	33.94	18.00
25.5	96.42	331.93	366.62	4,257.25	10.33	11.612	12.826	28.36	15.00
20.4	77.35	303.79	313.89	3,772.70	10.49	12.419	12.019	22.75	12.00
17.85	67.85	271.11	304.81	3,506.48	10.56	12.934	11.504	19.96	10.51
24 x 20 x 30.6	110.29	345.94	396.79	4,516.45	10.14	11.382	13.056	32.44	18.00
25.5	92.17	328.44	341.67	4,092.45	10.29	11.978	12.460	27.11	15.00
20.4	73.95	283.17	310.65	3,620.15	10.43	12.785	11.653	21.75	12.00
17.85	64.87	252.73	301.69	3,360.78	10.48	13.298	11.140	19.08	10.51
24 x 18 x 30.6	105.19	341.70	367.69	4,328.22	10.10	11.771	12.667	30.94	18.00
25.5	87.92	316.67	324.49	3,916.62	10.24	12.368	12.070	25.86	15.00
20.4	70.55	262.52	306.98	3,458.14	10.35	13.173	11.265	20.75	12.00
17.85	61.89	234.33	298.16	3,206.50	10.39	13.684	10.754	18.20	10.51
24 x 16 x 30.6	100.09	336.86	338.52	4,126.19	10.04	12.189	12.249	29.44	18.00
25.5	83.67	291.64	319.98	3,728.62	10.16	12.785	11.653	24.61	15.00
20.4	67.15	241.84	302.79	3,285.77	10.25	13.586	10.852	19.75	12.00
17.85	58.92	215.92	294.13	3,042.84	10.27	14.093	10.345	17.33	10.51



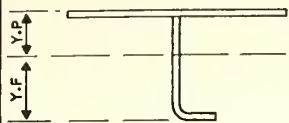
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 14 x 30.6	94.99	309.29	331.26	3,908.81	9.95	12.638	11.800	27.94	18.00
25.5	79.42	266.56	314.76	3,527.15	10.06	13.232	11.206	23.36	15.00
20.4	63.75	221.14	297.96	3,102.01	10.12	14.027	10.411	18.75	12.00
17.85	55.94	197.48	289.48	2,868.93	10.13	14.527	9.911	16.45	10.51
24 x 12 x 30.6	89.89	279.99	324.72	3,674.25	9.84	13.123	11.315	26.44	18.00
25.5	75.17	241.43	308.68	3,310.70	9.92	13.713	10.725	22.11	15.00
20.4	60.35	200.42	292.33	2,905.69	9.97	14.498	9.940	17.75	12.00
17.85	52.96	179.04	284.06	2,683.78	9.95	14.990	9.448	15.58	10.51
24 x 10 x 30.6	84.79	250.63	316.98	3,420.39	9.69	13.647	10.791	24.94	18.00
25.5	70.92	216.27	301.49	3,077.53	9.75	14.230	10.208	20.86	15.00
20.4	56.95	179.67	285.67	2,695.48	9.77	15.002	9.436	16.75	12.00
17.85	49.98	160.57	277.66	2,486.24	9.74	15.484	8.954	14.70	10.51
24 x 8 x 30.6	79.69	221.19	307.68	3,144.74	9.49	14.217	10.221	23.44	18.00
25.5	66.67	191.06	292.85	2,825.64	9.53	14.789	9.649	19.61	15.00
20.4	53.55	158.90	277.68	2,469.84	9.52	15.543	8.895	15.75	12.00
17.85	47.00	142.09	269.99	2,275.05	9.48	16.012	8.426	13.82	10.51
24 x 6 x 30.6	74.59	191.70	296.29	2,844.38	9.22	14.838	9.600	21.94	18.00
25.5	62.42	165.81	282.28	2,552.66	9.24	15.395	9.043	18.36	15.00
20.4	50.15	138.10	267.92	2,227.03	9.21	16.126	8.312	14.75	12.00
17.85	44.02	123.59	260.63	2,048.73	9.15	16.577	7.861	12.95	10.51
21 x 20 x 30.6	102.64	293.35	338.42	3,368.73	8.99	9.954	11.484	30.19	15.75
25.5	85.80	279.93	291.54	3,061.54	9.13	10.501	10.937	25.23	13.12
20.4	68.85	241.62	266.23	2,715.45	9.25	11.238	10.200	20.25	10.50
17.85	60.40	215.60	259.31	2,523.68	9.28	11.706	9.732	17.77	9.20
21 x 18 x 30.6	97.54	289.94	312.83	3,225.87	8.96	10.312	11.126	28.69	15.75
25.5	81.55	269.54	276.72	2,927.17	9.08	10.860	10.578	23.98	13.12
20.4	65.45	223.42	263.23	2,590.75	9.18	11.596	9.842	19.25	10.50
17.85	57.43	199.38	256.40	2,404.52	9.20	12.060	9.378	16.89	9.20
21 x 16 x 30.6	92.44	286.00	287.18	3,071.95	8.91	10.697	10.741	27.19	15.75
25.5	77.30	247.49	273.03	2,782.99	9.01	11.245	10.193	22.73	13.12
20.4	62.05	205.20	259.77	2,457.68	9.09	11.977	9.461	18.25	10.50
17.85	54.45	183.15	253.05	2,277.78	9.10	12.437	9.001	16.01	9.20
21 x 14 x 30.6	87.34	261.46	281.42	2,905.62	8.84	11.113	10.325	25.69	15.75
25.5	73.05	225.39	268.73	2,627.89	8.92	11.659	9.779	21.48	13.12
20.4	58.65	186.95	255.75	2,315.36	8.97	12.385	9.053	17.25	10.50
17.85	51.47	166.90	249.16	2,142.70	8.97	12.838	8.600	15.14	9.20
21 x 12 x 30.6	82.24	235.66	276.02	2,725.32	8.74	11.564	9.874	24.19	15.75
25.5	68.80	203.25	263.67	2,460.58	8.80	12.106	9.332	20.23	13.12
20.4	55.25	168.68	251.01	2,162.78	8.83	12.822	8.616	16.25	10.50
17.85	48.49	150.63	244.59	1,998.44	8.81	13.267	8.171	14.26	9.20
21 x 10 x 30.6	77.14	209.80	269.56	2,529.20	8.60	12.055	9.383	22.69	15.75
25.5	64.55	181.07	257.62	2,279.56	8.65	12.589	8.849	18.98	13.12
20.4	51.85	150.38	245.36	1,998.80	8.64	13.292	8.146	15.25	10.50
17.85	45.51	134.34	239.13	1,844.03	8.61	13.727	7.711	13.39	9.20
21 x 8 x 30.6	72.04	183.87	261.68	2,315.10	8.41	12.591	8.847	21.19	15.75
25.5	60.30	158.84	250.25	2,083.06	8.44	13.114	8.324	17.73	13.12
20.4	48.45	132.06	238.49	1,822.10	8.41	13.798	7.640	14.25	10.50
17.85	42.53	118.04	232.50	1,678.36	8.36	14.219	7.219	12.51	9.20
21 x 6 x 30.6	66.94	157.86	251.88	2,080.42	8.17	13.178	8.260	19.69	15.75
25.5	56.05	136.57	241.09	1,869.02	8.17	13.686	7.752	16.48	13.12
20.4	45.05	113.71	229.96	1,631.12	8.12	14.345	7.093	13.25	10.50
17.85	39.56	101.71	224.27	1,500.15	8.05	14.749	6.689	11.63	9.20



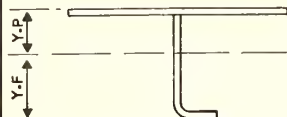
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

17.85 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 18 x 30.6	89.89	240.51	260.16	2,304.27	7.79	8.857	9.581	26.44	13.50
25.5	75.17	224.30	230.82	2,097.44	7.90	9.351	9.087	22.11	11.25
20.4	60.35	185.94	220.87	1,861.38	7.98	10.010	8.428	17.75	9.00
15.3	45.42	144.78	210.54	1,581.76	7.98	10.925	7.513	13.36	6.75
18 x 16 x 30.6	84.79	237.42	238.08	2,191.84	7.75	9.206	9.232	24.94	13.50
25.5	70.92	205.29	227.89	1,991.33	7.84	9.700	8.738	20.86	11.25
20.4	56.95	170.22	218.10	1,762.72	7.90	10.356	8.082	16.75	9.00
15.3	42.87	132.57	207.91	1,492.60	7.87	11.259	7.179	12.61	6.75
18 x 14 x 30.6	79.69	215.93	233.80	2,069.76	7.70	9.585	8.853	23.44	13.50
25.5	66.67	186.23	224.46	1,876.71	7.77	10.077	8.361	19.61	11.25
20.4	53.55	154.46	214.85	1,656.83	7.80	10.726	7.712	15.75	9.00
15.3	40.32	120.35	204.83	1,397.71	7.73	11.614	6.824	11.86	6.75
18 x 12 x 30.6	74.59	193.71	229.48	1,936.74	7.61	9.998	8.440	21.94	13.50
25.5	62.42	167.13	220.38	1,752.50	7.66	10.486	7.952	18.36	11.25
20.4	50.15	138.68	210.99	1,542.87	7.67	11.125	7.313	14.75	9.00
15.3	37.77	108.11	201.17	1,296.52	7.57	11.993	6.445	11.11	6.75
18 x 10 x 30.6	69.49	171.41	224.24	1,791.24	7.49	10.450	7.988	20.44	13.50
25.5	58.17	147.98	215.43	1,617.44	7.52	10.930	7.508	17.11	11.25
20.4	46.75	122.87	206.32	1,419.89	7.50	11.556	6.882	13.75	9.00
15.3	35.22	95.86	196.75	1,188.40	7.37	12.398	6.040	10.36	6.75
18 x 8 x 30.6	64.39	149.03	217.77	1,631.41	7.32	10.946	7.492	18.94	13.50
25.5	53.92	128.78	209.32	1,470.04	7.33	11.415	7.023	15.86	11.25
20.4	43.35	107.04	200.56	1,286.78	7.28	12.022	6.416	12.75	9.00
15.3	32.67	83.59	191.31	1,072.60	7.13	12.832	5.606	9.61	6.75
18 x 6 x 30.6	59.29	126.59	209.54	1,455.01	7.09	11.494	6.944	17.44	13.50
25.5	49.67	109.54	201.57	1,308.55	7.08	11.946	6.492	14.61	11.25
20.4	39.95	91.17	193.27	1,142.22	7.01	12.528	5.910	11.75	9.00
15.3	30.12	71.31	184.46	948.28	6.82	13.297	5.141	8.86	6.75
18 x 4 x 30.6	54.19	104.06	198.76	1,259.35	6.77	12.102	6.336	15.94	13.50
25.5	45.42	90.24	191.44	1,130.82	6.74	12.531	5.907	13.36	11.25
20.4	36.55	75.28	183.77	984.67	6.65	13.080	5.358	10.75	9.00
15.3	27.57	59.03	175.53	814.45	6.44	13.798	4.640	8.11	6.75
16 x 12 x 30.6	69.49	167.07	199.64	1,495.09	6.84	8.949	7.489	20.44	12.00
25.5	58.17	144.21	192.46	1,355.11	6.88	9.397	7.041	17.11	10.00
20.4	46.75	119.66	185.00	1,194.43	6.88	9.982	6.456	13.75	8.00
15.3	35.22	93.24	177.11	1,004.09	6.78	10.769	5.669	10.36	6.00
16 x 10 x 30.6	64.39	147.18	195.19	1,379.32	6.73	9.371	7.067	18.94	12.00
25.5	53.92	127.11	188.22	1,247.20	6.75	9.812	6.626	15.86	10.00
20.4	43.35	105.54	180.96	1,095.80	6.72	10.383	6.055	12.75	8.00
15.3	32.67	82.29	173.25	917.12	6.59	11.144	5.294	9.61	6.00
16 x 8 x 30.6	59.29	127.22	189.62	1,251.55	6.58	9.838	6.600	17.44	12.00
25.5	49.67	109.97	182.93	1,128.96	6.57	10.266	6.172	14.61	10.00
20.4	39.95	91.39	175.93	988.69	6.52	10.818	5.620	11.75	8.00
15.3	30.12	71.33	168.45	823.76	6.36	11.548	4.890	8.86	6.00
16 x 6 x 30.6	54.19	107.18	182.44	1,109.83	6.36	10.355	6.083	15.94	12.00
25.5	45.42	92.77	176.12	998.85	6.34	10.767	5.671	11.36	10.00
20.4	36.55	77.21	169.48	871.97	6.26	11.293	5.145	10.75	8.00
15.3	27.57	60.36	162.32	723.25	6.07	11.982	4.456	8.11	6.00
16 x 4 x 30.6	49.09	87.06	172.84	951.74	6.06	10.932	5.506	14.44	12.00
25.5	41.17	75.53	167.05	854.96	6.02	11.320	5.118	12.11	10.00
20.4	33.15	63.01	160.90	744.26	5.92	11.813	4.625	9.75	8.00
15.3	25.02	49.37	154.19	614.76	5.71	12.451	3.987	7.36	6.00



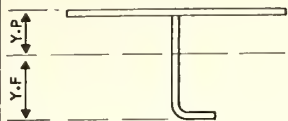
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

17.85 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 12 x 30.6	66.94	154.15	185.07	1,298.35	6.45	8.423	7.015	19.69	11.25
25.5	56.05	133.10	178.77	1,177.85	6.49	8.849	6.589	16.48	9.37
20.4	45.05	110.46	172.20	1,038.86	6.48	9.405	6.033	13.25	7.50
15.3	33.95	86.05	165.21	873.49	6.37	10.151	5.287	9.98	5.62
15 x 11 x 30.6	64.39	144.83	183.15	1,248.54	6.40	8.621	6.817	18.94	11.25
25.5	53.92	125.08	176.93	1,131.24	6.43	9.044	6.394	15.86	9.37
20.4	43.35	103.82	170.44	996.08	6.41	9.594	5.844	12.75	7.50
15.3	32.67	80.91	163.51	835.61	6.29	10.328	5.110	9.61	5.62
15 x 10 x 30.6	61.84	135.49	181.00	1,196.23	6.35	8.829	6.609	18.19	11.25
25.5	51.80	117.04	174.88	1,082.45	6.36	9.248	6.190	15.23	9.37
20.4	41.65	97.18	168.48	951.49	6.33	9.791	5.647	12.25	7.50
15.3	31.40	75.76	161.62	796.35	6.20	10.511	4.927	9.23	5.62
15 x 9 x 30.6	59.29	126.13	178.59	1,141.20	6.28	9.048	6.390	17.44	11.25
25.5	49.67	108.99	172.59	1,031.33	6.28	9.462	5.976	14.61	9.37
20.4	39.95	90.54	166.29	904.99	6.24	9.996	5.442	11.75	7.50
15.3	30.12	70.61	159.52	755.64	6.09	10.701	4.737	8.86	5.62
15 x 8 x 30.6	56.74	116.75	175.87	1,083.25	6.20	9.279	6.159	16.69	11.25
25.5	47.55	100.93	169.99	977.70	6.19	9.687	5.751	13.98	9.37
20.4	38.25	83.89	163.81	856.45	6.13	10.210	5.228	11.25	7.50
15.3	28.85	65.46	157.14	713.41	5.97	10.898	4.540	8.48	5.62
15 x 7 x 30.6	54.19	107.34	172.78	1,022.13	6.10	9.522	5.916	15.94	11.25
25.5	45.42	92.86	167.04	921.38	6.09	9.922	5.516	13.36	9.37
20.4	36.55	77.23	161.00	805.73	6.02	10.433	5.005	10.75	7.50
15.3	27.57	60.31	154.45	669.56	5.84	11.103	4.335	8.11	5.62
15 x 6 x 30.6	51.64	97.92	169.21	957.58	5.99	9.779	5.659	15.19	11.25
25.5	43.30	84.77	163.66	862.16	5.96	10.170	5.268	12.73	9.37
20.4	34.85	70.56	157.78	752.67	5.88	10.667	4.771	10.25	7.50
15.3	26.30	55.15	151.37	624.01	5.69	11.316	4.122	7.73	5.62
15 x 5 x 30.6	49.09	88.48	165.08	889.30	5.85	10.051	5.387	14.44	11.25
25.5	41.17	76.68	159.73	799.80	5.82	10.431	5.007	12.11	9.37
20.4	33.15	63.88	154.04	697.13	5.73	10.912	4.526	9.75	7.50
15.3	25.02	49.98	147.81	576.65	5.53	11.537	3.901	7.36	5.62
15 x 4 x 30.6	46.54	79.02	160.21	816.96	5.69	10.339	5.099	13.69	11.25
25.5	39.05	68.57	155.12	734.05	5.65	10.706	4.732	11.48	9.37
20.4	31.45	57.20	149.67	638.90	5.55	11.169	4.269	9.25	7.50
15.3	23.75	44.82	143.65	527.36	5.34	11.767	3.671	6.98	5.62
14 x 10 x 30.6	59.29	124.07	167.04	1,027.87	5.96	8.284	6.154	17.44	10.50
25.5	49.67	107.21	161.72	930.85	5.97	8.682	5.756	14.61	8.75
20.4	39.95	89.04	156.13	818.64	5.93	9.194	5.244	11.75	7.00
15.3	30.12	69.40	150.07	685.17	5.80	9.872	4.566	8.86	5.25
14 x 9 x 30.6	56.74	115.33	164.84	979.67	5.89	8.495	5.943	16.69	10.50
25.5	47.55	99.69	159.62	885.98	5.90	8.887	5.551	13.98	8.75
20.4	38.25	82.82	154.10	777.75	5.85	9.391	5.047	11.25	7.00
15.3	28.85	64.58	148.11	649.33	5.70	10.054	4.384	8.48	5.25
14 x 8 x 30.6	54.19	106.56	162.35	928.83	5.82	8.717	5.721	15.94	10.50
25.5	45.42	92.15	157.23	838.85	5.81	9.103	5.335	13.36	8.75
20.4	36.55	76.59	151.81	735.03	5.75	9.596	4.842	10.75	7.00
15.3	27.57	59.76	145.90	612.13	5.59	10.243	4.195	8.11	5.25
14 x 7 x 30.6	51.64	97.77	159.50	875.15	5.73	8.951	5.487	15.19	10.50
25.5	43.30	84.60	154.50	789.29	5.71	9.329	5.109	12.73	8.75
20.4	34.85	70.36	149.20	690.33	5.63	9.811	4.627	10.25	7.00
15.3	26.30	54.94	143.39	573.47	5.46	10.439	3.999	7.73	5.25



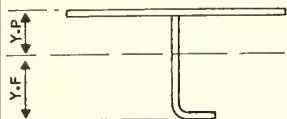
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

17.85 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
14 x 6 x 30.6	49.09	88.96	156.20	818.35	5.62	9.199	5.239	14.44	10.50
25.5	41.17	77.04	151.36	737.11	5.59	9.568	4.870	12.11	8.75
20.4	33.15	64.12	146.19	643.54	5.50	10.036	4.402	9.75	7.00
15.3	25.02	50.11	140.49	533.27	5.32	10.642	3.796	7.36	5.25
13 x 9 x 30.6	54.19	104.81	151.31	832.07	5.51	7.939	5.499	15.94	9.75
25.5	45.42	90.64	146.81	753.07	5.50	8.309	5.129	13.36	8.12
20.4	36.55	75.31	142.04	661.37	5.45	8.782	4.656	10.75	6.50
15.3	27.57	58.73	136.78	552.13	5.30	9.401	4.037	8.11	4.87
13 x 8 x 30.6	51.64	96.66	149.04	787.92	5.43	8.151	5.287	15.19	9.75
25.5	43.30	83.63	144.63	712.06	5.42	8.515	4.923	12.73	8.12
20.4	34.85	69.52	139.93	624.13	5.36	8.978	4.460	10.25	6.50
15.3	26.30	54.24	134.73	519.67	5.20	9.581	3.857	7.73	4.87
13 x 7 x 30.6	49.09	88.49	146.43	741.22	5.34	8.376	5.062	14.44	9.75
25.5	41.17	76.60	142.13	668.88	5.32	8.732	4.706	12.11	8.12
20.4	33.15	63.72	137.52	585.14	5.25	9.183	4.255	9.75	6.50
15.3	25.02	49.75	132.39	485.92	5.07	9.768	3.670	7.36	4.87
13 x 6 x 30.6	46.54	80.30	143.40	691.75	5.24	8.614	4.824	13.69	9.75
25.5	39.05	69.57	139.22	623.35	5.21	8.961	4.477	11.48	8.12
20.4	31.45	57.91	134.72	544.27	5.12	9.398	4.040	9.25	6.50
15.3	23.75	45.25	129.69	450.80	4.94	9.962	3.476	6.98	4.87
12 x 9 x 30.6	51.64	94.59	137.99	698.01	5.11	7.379	5.059	15.19	9.00
25.5	43.30	81.84	134.18	632.28	5.11	7.726	4.712	12.73	7.50
20.4	34.85	68.02	130.09	555.57	5.05	8.167	4.271	10.25	6.00
15.3	26.30	53.05	125.52	463.78	4.91	8.743	3.695	7.73	4.50
12 x 8 x 30.6	49.09	87.06	135.94	660.12	5.04	7.582	4.856	14.44	9.00
25.5	41.17	75.36	132.20	597.00	5.03	7.922	4.516	12.11	7.50
20.4	33.15	62.67	128.16	523.48	4.96	8.353	4.085	9.75	6.00
15.3	25.02	48.89	123.63	435.78	4.81	8.913	3.525	7.36	4.50
12 x 7 x 30.6	46.54	79.52	133.57	619.97	4.96	7.796	4.642	13.69	9.00
25.5	39.05	68.87	129.91	559.81	4.93	8.129	4.309	11.48	7.50
20.4	31.45	57.30	125.94	489.84	4.86	8.549	3.889	9.25	6.00
15.3	23.75	44.74	121.46	406.65	4.69	9.090	3.348	6.98	4.50
12 x 6 x 30.6	43.99	71.95	130.81	577.36	4.86	8.024	4.414	12.94	9.00
25.5	36.92	62.36	127.24	520.54	4.82	8.347	4.091	10.86	7.50
20.4	29.75	51.93	123.36	454.55	4.74	8.753	3.685	8.75	6.00
15.3	22.47	40.58	118.94	376.31	4.56	9.274	3.164	6.61	4.50
11 x 8 x 25.5	39.05	67.36	119.92	493.32	4.63	7.324	4.114	11.48	6.87
22.95	35.29	61.86	118.27	464.56	4.61	7.510	3.928	10.38	6.19
20.4	31.45	56.03	116.50	432.76	4.57	7.723	3.715	9.25	5.50
17.85	27.64	50.06	114.64	398.54	4.50	7.962	3.476	8.13	4.82
15.3	23.75	43.73	112.58	360.23	4.41	8.238	3.200	6.98	4.12
11 x 7 x 25.5	36.92	61.40	117.85	461.72	4.54	7.520	3.918	10.86	6.87
22.95	33.38	56.40	116.22	434.35	4.51	7.701	3.737	9.82	6.19
20.4	29.75	51.11	114.48	404.14	4.47	7.908	3.530	8.75	5.50
17.85	26.15	45.67	112.63	371.67	4.40	8.138	3.300	7.69	4.82
15.3	22.47	39.91	110.58	335.42	4.30	8.405	3.033	6.61	4.12
11 x 6 x 25.5	34.80	55.43	115.42	428.30	4.44	7.727	3.711	10.23	6.87
22.95	31.46	50.94	113.83	402.50	4.40	7.902	3.536	9.25	6.19
20.4	28.05	46.17	112.11	374.07	4.35	8.101	3.337	8.25	5.50
17.85	24.66	41.28	110.29	343.56	4.28	8.323	3.115	7.25	4.82
15.3	21.20	36.08	108.26	309.55	4.18	8.579	2.859	6.23	4.12
10 x 8 x 25.5	36.92	59.62	107.79	400.68	4.23	6.721	3.717	10.86	6.25
22.95	33.38	54.77	106.42	377.44	4.21	6.891	3.547	9.82	5.63
20.4	29.75	49.63	104.94	351.69	4.17	7.087	3.351	8.75	5.00



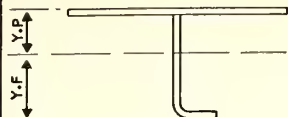
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

17.85 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 8 x 17.85	26.15	44.34	103.36	323.90	4.11	7.304	3.134	7.69	4.38
15.3	22.47	38.74	101.58	292.74	4.02	7.556	2.882	6.61	3.75
10 x 7 x 25.5	34.80	54.20	105.93	374.25	4.15	6.905	3.533	10.23	6.25
22.95	31.46	49.81	104.58	352.16	4.12	7.071	3.367	9.25	5.63
20.4	28.05	45.14	103.11	327.72	4.07	7.260	3.178	8.25	5.00
17.85	24.66	40.35	101.53	301.40	4.01	7.470	2.968	7.25	4.38
15.3	21.20	35.26	99.76	271.95	3.91	7.712	2.726	6.23	3.75
10 x 6 x 25.5	32.67	48.77	103.74	346.26	4.05	7.100	3.338	9.61	6.25
22.95	29.55	44.83	102.41	325.47	4.01	7.260	3.178	8.69	5.63
20.4	26.35	40.65	100.95	302.51	3.96	7.442	2.996	7.75	5.00
17.85	23.17	36.35	99.39	277.81	3.89	7.643	2.795	6.82	4.38
15.3	19.92	31.78	97.62	250.25	3.80	7.874	2.564	5.86	3.75



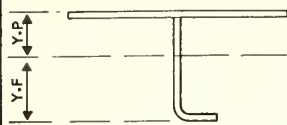
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MOOULUS		I	r	YF	YP	BEAM OIOMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 30.6	151.09	570.46	723.00	9,725.46	12.79	13.452	17.048	44.44	22.50
25.5	126.17	541.82	620.67	8,823.17	13.01	14.216	16.284	37.11	18.75
20.4	101.15	512.76	512.79	7,819.84	13.22	15.250	15.250	29.75	15.00
17.85	88.70	456.90	498.21	7,269.04	13.30	15.910	14.590	26.09	13.14
30 x 27 x 30.6	143.44	564.02	667.72	9,325.47	12.77	13.966	16.534	42.19	22.50
25.5	119.80	535.80	573.29	8,447.15	12.97	14.735	15.765	35.23	18.75
20.4	96.05	473.70	507.19	7,470.59	13.14	15.771	14.729	28.25	15.00
17.85	84.23	422.14	492.81	6,934.83	13.20	16.428	14.072	24.77	13.14
30 x 24 x 30.6	135.79	556.59	612.33	8,892.73	12.72	14.523	15.977	39.94	22.50
25.5	113.42	525.83	528.86	8,041.98	12.90	15.294	15.206	33.36	18.75
20.4	90.95	434.60	500.73	7,096.24	13.04	16.328	14.172	26.75	15.00
17.85	79.76	387.34	486.59	6,577.79	13.08	16.982	13.518	23.46	13.14
30 x 21 x 30.6	128.14	547.91	556.83	8,423.03	12.64	15.127	15.373	37.69	22.50
25.5	107.05	478.31	520.76	7,604.12	12.79	15.898	14.602	31.48	18.75
20.4	85.85	395.45	493.20	6,693.99	12.90	16.927	13.573	25.25	15.00
17.85	75.30	352.52	479.33	6,195.48	12.91	17.575	12.925	22.15	13.14
30 x 18 x 30.6	120.49	501.20	537.64	7,911.45	12.52	15.785	14.715	35.44	22.50
25.5	100.67	430.70	511.19	7,129.46	12.64	16.553	13.947	29.61	18.75
20.4	80.75	356.26	484.30	6,260.61	12.71	17.573	12.927	23.75	15.00
17.85	70.83	317.67	470.76	5,785.14	12.71	18.211	12.289	20.83	13.14
30 x 15 x 30.6	112.84	445.46	525.32	7,352.09	12.35	16.504	13.996	33.19	22.50
25.5	94.30	383.02	499.70	6,613.16	12.44	17.266	13.234	27.73	18.75
20.4	75.65	317.03	473.64	5,792.32	12.47	18.271	12.229	22.25	15.00
17.85	66.36	282.79	460.50	5,343.57	12.44	18.896	11.604	19.52	13.14
30 x 12 x 30.6	105.19	389.60	510.24	6,737.95	12.11	17.295	13.205	30.94	22.50
25.5	87.92	335.27	485.65	6,049.48	12.17	18.044	12.456	25.86	18.75
20.4	70.55	277.75	460.61	5,284.74	12.16	19.027	11.473	20.75	15.00
17.85	61.89	247.87	447.96	4,867.04	12.11	19.635	10.865	18.20	13.14
30 x 9 x 30.6	97.54	333.62	491.37	6,060.57	11.78	18.166	12.334	28.69	22.50
25.5	81.55	287.44	468.10	5,431.57	11.80	18.896	11.604	23.98	18.75
20.4	65.45	238.44	444.34	4,732.71	11.76	19.849	10.651	19.25	15.00
17.85	57.43	212.93	432.32	4,351.25	11.68	20.435	10.065	16.89	13.14
30 x 6 x 30.6	89.89	277.53	467.07	5,309.63	11.32	19.132	11.368	26.44	22.50
25.5	75.17	239.53	445.52	5,751.24	11.32	19.835	10.665	22.11	18.75
20.4	60.35	199.07	423.46	4,130.10	11.23	20.747	9.753	17.75	15.00
17.85	52.96	177.95	412.26	3,791.12	11.14	21.304	9.196	15.58	13.14
27 x 27 x 30.6	135.79	495.58	590.20	7,408.05	11.61	12.552	14.948	39.94	20.25
25.5	113.42	472.63	506.80	6,725.39	11.79	13.270	14.230	33.36	16.87
20.4	90.95	418.66	449.31	5,959.86	11.95	14.235	13.265	26.75	13.50
17.85	79.76	372.98	437.56	5,537.05	12.00	14.845	12.655	23.46	11.83
27 x 24 x 30.6	128.14	489.32	540.10	7,060.09	11.58	13.072	14.428	37.69	20.25
25.5	107.05	463.84	466.75	6,397.81	11.73	13.793	13.707	31.48	16.87
20.4	85.85	383.25	443.80	5,655.51	11.85	14.757	12.743	25.25	13.50
17.85	75.30	341.47	432.23	5,245.98	11.88	15.363	12.137	22.15	11.83
27 x 21 x 30.6	120.49	481.98	489.88	6,681.09	11.51	13.638	13.862	35.44	20.25
25.5	100.67	420.81	459.86	6,042.69	11.64	14.360	13.140	29.61	16.87
20.4	80.75	347.80	437.34	5,327.60	11.73	15.318	12.182	23.75	13.50
17.85	70.83	309.93	425.98	4,933.56	11.73	15.918	11.582	20.83	11.83
27 x 18 x 30.6	112.84	439.54	473.22	6,266.70	11.40	14.257	13.243	33.19	20.25
25.5	94.30	377.70	451.64	5,656.42	11.50	14.976	12.524	27.73	16.87
20.4	75.65	312.30	429.65	4,973.28	11.55	15.925	11.575	22.25	13.50
17.85	66.36	278.36	418.54	4,597.35	11.54	16.516	10.984	19.52	11.83



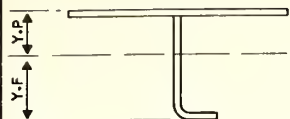
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60†

STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 15 x 30.6	105.19	389.07	462.62	5,811.73	11.25	14.937	12.563	30.94	20.25
25.5	87.92	334.51	441.70	5,234.70	11.32	15.649	11.851	25.86	16.87
20.4	70.55	276.75	420.36	4,589.23	11.33	16.583	10.917	20.75	13.50
17.85	61.89	246.76	409.56	4,234.54	11.29	17.161	10.339	18.20	11.83
27 x 12 x 30.6	97.54	338.48	449.51	5,309.91	11.02	15.687	11.813	28.69	20.25
25.5	81.55	291.24	429.42	4,772.43	11.06	16.386	11.114	23.98	16.87
20.4	65.45	241.16	408.89	4,171.54	11.04	17.298	10.202	19.25	13.50
17.85	57.43	215.12	398.48	3,841.83	10.98	17.859	9.641	16.89	11.83
27 x 9 x 30.6	89.89	287.77	432.89	4,753.61	10.71	16.519	10.981	26.44	20.25
25.5	75.17	247.90	413.87	4,263.44	10.72	17.199	10.301	22.11	16.87
20.4	60.35	205.52	394.38	3,715.60	10.65	18.079	9.421	17.75	13.50
17.85	52.96	183.46	384.48	3,415.37	10.57	18.617	8.883	15.58	11.83
27 x 6 x 30.6	82.24	236.93	411.11	4,133.43	10.27	17.446	10.054	24.19	20.25
25.5	68.80	204.47	393.53	3,700.29	10.25	18.097	9.403	20.23	16.87
20.4	55.25	169.84	375.45	3,215.88	10.14	18.935	8.565	16.25	13.50
17.85	48.49	151.76	366.22	2,950.61	10.04	19.443	8.057	14.26	11.83
24 x 24 x 30.6	120.49	424.41	470.04	5,464.27	10.41	11.625	12.875	35.44	18.00
25.5	100.67	403.74	406.53	4,962.81	10.55	12.292	12.208	29.61	15.00
20.4	80.75	333.51	388.27	4,395.46	10.65	13.179	11.321	23.75	12.00
17.85	70.83	297.06	379.03	4,080.20	10.67	13.735	10.765	20.83	10.51
24 x 22 x 30.6	115.39	420.47	440.15	5,268.53	10.38	11.970	12.530	33.94	18.00
25.5	96.42	378.10	402.80	4,778.21	10.50	12.638	11.862	28.36	15.00
20.4	77.35	312.37	384.75	4,223.84	10.58	13.522	10.978	22.75	12.00
17.85	67.85	278.25	375.61	3,916.14	10.58	14.074	10.426	19.96	10.51
24 x 20 x 30.6	110.29	410.20	416.04	5,060.42	10.33	12.337	12.163	32.44	18.00
25.5	92.17	352.42	398.61	4,582.65	10.43	13.003	11.497	27.11	15.00
20.4	73.95	291.21	380.80	4,042.88	10.49	13.883	10.617	21.75	12.00
17.85	64.87	259.43	371.77	3,743.65	10.48	14.430	10.070	19.08	10.51
24 x 18 x 30.6	105.19	380.19	411.01	4,838.72	10.26	12.727	11.773	30.94	18.00
25.5	87.92	326.71	393.86	4,375.12	10.35	13.392	11.108	25.86	15.00
20.4	70.55	270.03	376.31	3,851.80	10.38	14.264	10.236	20.75	12.00
17.85	61.89	240.60	367.41	3,562.05	10.36	14.805	9.695	18.20	10.51
24 x 16 x 30.6	100.09	350.12	405.26	4,602.06	10.18	13.144	11.356	29.44	18.00
25.5	83.67	300.96	388.43	4,154.51	10.24	13.804	10.696	24.61	15.00
20.4	67.15	248.83	371.20	3,649.72	10.25	14.668	9.832	19.75	12.00
17.85	58.92	221.75	362.44	3,370.62	10.21	15.200	9.300	17.33	10.51
24 x 14 x 30.6	94.99	320.00	398.62	4,348.87	10.06	13.590	10.910	27.94	18.00
25.5	79.42	275.17	382.17	3,919.51	10.11	14.244	10.256	23.36	15.00
20.4	63.75	227.60	365.30	3,435.67	10.09	15.095	9.405	18.75	12.00
17.85	55.94	202.88	356.72	3,168.52	10.04	15.618	8.882	16.45	10.51
24 x 12 x 30.6	89.89	289.82	390.87	4,077.36	9.92	14.069	10.431	26.44	18.00
25.5	75.17	249.34	374.87	3,668.69	9.94	14.713	9.787	22.11	15.00
20.4	60.35	206.36	358.42	3,208.55	9.90	15.548	8.952	17.75	12.00
17.85	52.96	184.00	350.05	2,954.84	9.83	16.059	8.441	15.58	10.51
24 x 10 x 30.6	84.79	259.58	381.71	3,785.45	9.74	14.583	9.917	24.94	18.00
25.5	70.92	223.48	366.24	3,400.38	9.74	15.215	9.285	20.86	15.00
20.4	56.95	185.10	350.31	2,967.13	9.67	16.030	8.470	16.75	12.00
17.85	49.98	165.11	342.18	2,728.56	9.58	16.526	7.974	14.70	10.51
24 x 8 x 30.6	79.69	229.29	370.70	3,470.77	9.50	15.137	9.363	23.44	18.00
25.5	66.67	197.59	355.88	3,112.70	9.48	15.754	8.746	19.61	15.00
20.4	53.55	163.81	340.59	2,710.00	9.39	16.543	7.957	15.75	12.00
17.85	47.00	146.20	332.76	2,488.52	9.29	17.021	7.479	13.82	10.51



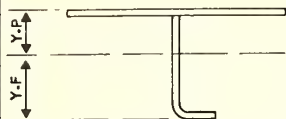
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MOOULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 6 x 30.6	74.59	198.93	357.24	3,130.53	9.21	15.737	8.763	21.94	18.00
25.5	62.42	171.65	343.23	2,803.46	9.17	16.332	8.168	18.36	15.00
20.4	50.15	142.51	328.73	2,435.59	9.05	17.091	7.409	14.75	12.00
17.85	44.02	127.28	321.27	2,233.44	8.94	17.548	6.952	12.95	10.51
21 x 20 x 30.6	102.64	349.54	355.09	3,787.18	9.15	10.835	10.665	30.19	15.75
25.5	85.80	300.37	341.72	3,436.91	9.24	11.442	10.058	25.23	13.12
20.4	68.85	248.14	327.98	3,037.17	9.28	12.240	9.260	20.25	10.50
17.85	60.40	220.99	320.97	2,813.94	9.27	12.733	8.767	17.77	9.20
21 x 18 x 30.6	97.54	323.16	350.99	3,617.37	9.10	11.194	10.306	28.69	15.75
25.5	81.55	277.73	337.82	3,277.06	9.17	11.799	9.701	23.98	13.12
20.4	65.45	229.49	324.26	2,889.19	9.18	12.590	8.910	19.25	10.50
17.85	57.43	204.40	317.34	2,672.97	9.16	13.077	8.423	16.89	9.20
21 x 16 x 30.6	92.44	296.71	346.27	3,435.48	9.02	11.578	9.922	27.19	15.75
25.5	77.30	255.06	333.32	3,106.62	9.07	12.180	9.320	22.73	13.12
20.4	62.05	210.81	319.98	2,732.32	9.07	12.961	8.539	18.25	10.50
17.85	54.45	187.80	313.16	2,524.04	9.02	13.440	8.060	16.01	9.20
21 x 14 x 30.6	87.34	270.21	340.77	3,240.20	8.92	11.992	9.508	25.69	15.75
25.5	73.05	232.36	328.09	2,924.51	8.95	12.586	8.914	21.48	13.12
20.4	58.65	192.11	315.01	2,565.72	8.92	13.355	8.145	17.25	10.50
17.85	51.47	171.18	308.31	2,366.46	8.86	13.824	7.676	15.14	9.20
21 x 12 x 30.6	82.24	243.64	334.29	3,029.96	8.79	12.436	9.064	24.19	15.75
25.5	68.80	209.61	321.94	2,729.48	8.80	13.022	8.478	20.23	13.12
20.4	55.25	173.40	309.17	2,388.46	8.74	13.775	7.725	16.25	10.50
17.85	48.49	154.55	302.60	2,199.44	8.67	14.232	7.268	14.26	9.20
21 x 10 x 30.6	77.14	217.01	326.55	2,803.00	8.62	12.916	8.584	22.69	15.75
25.5	64.55	186.82	314.59	2,520.11	8.61	13.489	8.011	18.98	13.12
20.4	51.85	154.66	302.19	2,199.48	8.53	14.222	7.278	15.25	10.50
17.85	45.51	137.90	295.81	2,022.11	8.44	14.664	6.836	13.39	9.20
21 x 8 x 30.6	72.04	190.33	317.12	2,557.23	8.41	13.436	8.064	21.19	15.75
25.5	60.30	164.00	305.66	2,294.74	8.37	13.992	7.508	17.73	13.12
20.4	48.45	135.90	293.73	1,997.58	8.26	14.699	6.801	14.25	10.50
17.85	42.53	121.23	287.56	1,833.49	8.16	15.124	6.376	12.51	9.20
21 x 6 x 30.6	66.94	163.58	305.40	2,290.21	8.13	14.001	7.499	19.69	15.75
25.5	56.05	141.14	294.57	2,051.49	8.07	14.536	6.964	16.48	13.12
20.4	45.05	117.11	283.24	1,781.39	7.94	15.211	6.289	13.25	10.50
17.85	39.56	104.55	277.36	1,632.46	7.83	15.614	5.886	11.63	9.20
18 x 18 x 30.6	89.89	268.46	293.16	2,592.50	7.91	9.657	8.843	26.44	13.50
25.5	75.17	230.81	283.49	2,353.69	7.96	10.198	8.302	22.11	11.25
20.4	60.35	190.69	273.45	2,078.44	7.97	10.899	7.601	17.75	9.00
15.3	45.42	147.87	262.82	1,750.68	7.86	11.839	6.661	13.36	6.75
18 x 16 x 30.6	84.79	245.70	289.40	2,458.35	7.85	10.005	8.495	24.94	13.50
25.5	70.92	211.27	279.88	2,227.25	7.88	10.542	7.958	20.86	11.25
20.4	56.95	174.59	269.97	1,961.44	7.86	11.235	7.265	16.75	9.00
15.3	42.87	135.42	259.45	1,646.08	7.72	12.155	6.345	12.61	6.75
18 x 14 x 30.6	79.69	222.88	284.99	2,313.73	7.76	10.381	8.119	23.44	13.50
25.5	66.67	191.69	275.64	2,091.68	7.77	10.912	7.588	19.61	11.25
20.4	53.55	158.46	265.90	1,836.83	7.73	11.592	6.908	15.75	9.00
15.3	40.32	122.95	255.50	1,535.65	7.56	12.490	6.010	11.86	6.75
18 x 12 x 30.6	74.59	199.99	279.73	2,157.37	7.64	10.788	7.712	21.94	13.50
25.5	62.42	172.08	270.60	1,945.95	7.64	11.309	7.191	18.36	11.25
20.4	50.15	142.30	261.05	1,703.84	7.57	11.973	6.527	14.75	9.00
15.3	37.77	110.48	250.82	1,418.87	7.37	12.843	5.657	11.11	6.75



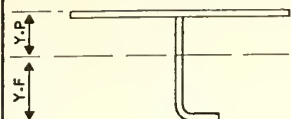
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 10 x 30.6	69.49	177.03	273.36	1,987.79	7.49	11.228	7.272	20.44	13.50
25.5	58.17	152.42	264.50	1,788.88	7.46	11.737	6.763	17.11	11.25
20.4	46.75	126.13	255.21	1,561.61	7.37	12.381	6.119	13.75	9.00
15.3	35.22	97.99	245.18	1,295.19	7.15	13.217	5.283	10.36	6.75
18 x 8 x 30.6	64.39	154.01	265.49	1,803.21	7.29	11.708	6.792	18.94	13.50
25.5	53.92	132.72	256.98	1,619.09	7.24	12.200	6.300	15.86	11.25
20.4	43.35	109.93	248.00	1,409.12	7.13	12.818	5.682	12.75	9.00
15.3	32.67	85.50	238.25	1,163.97	6.88	13.614	4.886	9.61	6.75
18 x 6 x 30.6	59.29	130.93	255.52	1,601.58	7.03	12.232	6.268	17.44	13.50
25.5	49.67	112.98	247.47	1,434.96	6.96	12.701	5.799	14.61	11.25
20.4	39.95	93.71	238.92	1,245.24	6.82	13.288	5.212	11.75	9.00
15.3	30.12	72.99	229.53	1,024.50	6.55	14.036	4.464	8.86	6.75
18 x 4 x 30.6	54.19	107.78	242.47	1,380.40	6.68	12.807	5.693	15.94	13.50
25.5	45.42	93.20	235.05	1,234.61	6.60	13.247	5.253	13.36	11.25
20.4	36.55	77.47	227.09	1,068.63	6.44	13.794	4.706	10.75	9.00
15.3	27.57	60.47	218.23	875.97	6.16	14.486	4.014	8.11	6.75
16 x 12 x 30.6	69.49	172.31	244.45	1,667.61	6.86	9.678	6.822	20.44	12.00
25.5	58.17	148.30	237.22	1,505.67	6.85	10.153	6.347	17.11	10.00
20.4	46.75	122.64	229.58	1,318.96	6.77	10.755	5.745	13.75	8.00
15.3	35.22	95.17	221.24	1,098.00	6.58	11.537	4.963	10.36	6.00
16 x 10 x 30.6	64.39	151.84	238.97	1,531.98	6.72	10.089	6.411	18.94	12.00
25.5	53.92	130.76	231.94	1,379.69	6.69	10.551	5.949	15.86	10.00
20.4	43.35	108.20	224.47	1,204.61	6.59	11.133	5.367	12.75	8.00
15.3	32.67	84.02	216.25	998.43	6.37	11.883	4.617	9.61	6.00
16 x 8 x 30.6	59.29	131.31	232.12	1,383.82	6.53	10.538	5.962	17.44	12.00
25.5	49.67	113.17	225.35	1,243.07	6.48	10.984	5.516	14.61	10.00
20.4	39.95	93.73	218.10	1,081.71	6.36	11.540	4.960	11.75	8.00
15.3	30.12	72.86	210.06	892.61	6.12	12.251	4.249	8.86	6.00
16 x 6 x 30.6	54.19	110.71	223.32	1,221.29	6.28	11.031	5.469	15.94	12.00
25.5	45.42	95.55	216.89	1,094.41	6.21	11.454	5.046	13.36	10.00
20.4	36.55	79.25	209.96	949.27	6.07	11.979	4.521	10.75	8.00
15.3	27.57	61.69	202.16	779.92	5.81	12.642	3.858	8.11	6.00
15 x 12 x 30.6	66.94	158.90	227.13	1,449.16	6.46	9.120	6.380	19.69	11.25
25.5	56.05	136.79	220.78	1,309.15	6.45	9.570	5.930	16.48	9.37
20.4	45.05	113.13	214.01	1,147.12	6.37	10.140	5.360	13.25	7.50
15.3	33.95	87.78	206.55	954.81	6.18	10.877	4.623	9.98	5.62
15 x 11 x 30.6	64.39	149.31	224.75	1,390.50	6.40	9.313	6.187	18.94	11.25
25.5	53.92	128.56	218.47	1,254.48	6.38	9.758	5.742	15.86	9.37
20.4	43.35	106.35	211.76	1,097.32	6.29	10.318	5.182	12.75	7.50
15.3	32.67	82.54	204.33	911.30	6.09	11.040	4.460	9.61	5.62
15 x 10 x 30.6	61.84	139.69	222.09	1,329.20	6.33	9.515	5.985	18.19	11.25
25.5	51.80	120.32	215.89	1,197.55	6.29	9.953	5.547	15.23	9.37
20.4	41.65	99.56	209.26	1,045.70	6.19	10.503	4.997	12.25	7.50
15.3	31.40	77.31	201.88	866.45	5.98	11.208	4.292	9.23	5.62
15 x 9 x 30.6	59.29	130.07	219.11	1,265.06	6.24	9.726	5.774	17.44	11.25
25.5	49.67	112.07	213.01	1,138.21	6.20	10.157	5.343	14.61	9.37
20.4	39.95	92.77	206.46	992.15	6.09	10.695	4.805	11.75	7.50
15.3	30.12	72.06	199.14	820.18	5.86	11.381	4.119	8.86	5.62
15 x 8 x 30.6	56.74	120.42	215.74	1,197.89	6.15	9.948	5.552	16.69	11.25
25.5	47.55	103.80	209.76	1,076.32	6.09	10.369	5.131	13.98	9.37
20.4	38.25	85.97	203.31	936.55	5.97	10.893	4.607	11.25	7.50
15.3	28.85	66.82	196.05	772.44	5.74	11.560	3.940	8.48	5.62



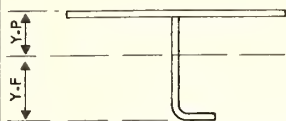
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	110.76	211.92	1,127.46	6.04	10.180	5.320	15.94	11.25
25.5	45.42	95.53	206.07	1,011.70	5.97	10.590	4.910	13.36	9.37
20.4	36.55	79.17	199.73	878.80	5.84	11.100	4.400	10.75	7.50
15.3	27.57	61.57	192.56	723.15	5.59	11.745	3.755	8.11	5.62
14 x 10 x 30.6	59.29	127.85	205.41	1,142.62	5.94	8.937	5.563	17.44	10.50
25.5	49.67	110.15	200.00	1,029.91	5.90	9.350	5.150	14.61	8.75
20.4	39.95	91.15	194.16	899.45	5.80	9.867	4.633	11.75	7.00
15.3	30.12	70.77	187.56	745.05	5.59	10.528	3.972	8.86	5.25
14 x 9 x 30.6	56.74	118.85	202.67	1,086.30	5.86	9.140	5.360	16.69	10.50
25.5	47.55	102.43	197.34	977.74	5.81	9.545	4.955	13.98	8.75
20.4	38.25	84.80	191.56	852.32	5.70	10.051	4.449	11.25	7.00
15.3	28.85	65.87	184.99	704.31	5.48	10.693	3.807	8.48	5.25
14 x 8 x 30.6	54.19	109.84	199.56	1,027.25	5.76	9.352	5.148	15.94	10.50
25.5	45.42	94.71	194.32	923.27	5.71	9.749	4.751	13.36	8.75
20.4	36.55	78.44	188.62	803.35	5.59	10.241	4.259	10.75	7.00
15.3	27.57	60.96	182.10	662.25	5.35	10.863	3.637	8.11	5.25
14 x 7 x 30.6	51.64	100.81	196.01	965.27	5.65	9.576	4.924	15.19	10.50
25.5	43.30	86.97	190.89	866.34	5.59	9.961	4.539	12.73	8.75
20.4	34.85	72.08	185.27	752.44	5.46	10.439	4.061	10.25	7.00
15.3	26.30	56.05	178.81	618.80	5.22	11.039	3.461	7.73	5.25
13 x 9 x 30.6	54.19	107.95	186.42	922.89	5.46	8.549	4.951	15.94	9.75
25.5	45.42	93.07	181.81	831.01	5.41	8.929	4.571	13.36	8.12
20.4	36.55	77.06	176.75	724.48	5.30	9.401	4.099	10.75	6.50
15.3	27.57	59.86	170.90	598.46	5.09	9.998	3.502	8.11	4.87
13 x 8 x 30.6	51.64	99.57	183.57	871.50	5.37	8.753	4.747	15.19	9.75
25.5	43.30	85.88	179.03	783.54	5.32	9.123	4.377	12.73	8.12
20.4	34.85	71.15	174.02	681.77	5.20	9.582	3.918	10.25	6.50
15.3	26.30	55.29	168.19	561.76	4.97	10.160	3.340	7.73	4.87
13 x 7 x 30.6	49.09	91.18	180.30	817.48	5.27	8.966	4.534	14.44	9.75
25.5	41.17	78.69	175.85	733.88	5.20	9.327	4.173	12.11	8.12
20.4	33.15	65.23	170.90	637.33	5.07	9.771	3.729	9.75	6.50
15.3	25.02	50.72	165.10	523.84	4.84	10.327	3.173	7.36	4.87
12 x 9 x 30.6	51.64	97.36	170.37	774.42	5.06	7.954	4.546	15.19	9.00
25.5	43.30	83.97	166.43	697.66	5.02	8.308	4.192	12.73	7.50
20.4	34.85	69.56	162.03	608.32	4.91	8.746	3.754	10.25	6.00
15.3	26.30	54.03	156.84	502.35	4.70	9.297	3.203	7.73	4.50
12 x 8 x 30.6	49.09	89.62	167.77	730.20	4.98	8.147	4.353	14.44	9.00
25.5	41.17	77.34	163.88	656.76	4.92	8.492	4.008	12.11	7.50
20.4	33.15	64.09	159.52	571.49	4.81	8.917	3.583	9.75	6.00
15.3	25.02	49.81	154.32	470.70	4.59	9.450	3.050	7.36	4.50
12 x 7 x 30.6	46.54	81.87	164.77	683.67	4.88	8.351	4.149	13.69	9.00
25.5	39.05	70.69	160.94	613.94	4.81	8.685	3.815	11.48	7.50
20.4	31.45	58.61	156.62	533.15	4.69	9.096	3.404	9.25	6.00
15.3	23.75	45.59	151.44	437.98	4.46	9.608	2.892	6.98	4.50
12 x 6 x 30.6	43.99	74.10	161.27	634.65	4.77	8.565	3.935	12.94	9.00
25.5	36.92	64.03	157.53	569.04	4.69	8.888	3.612	10.86	7.50
20.4	29.75	53.13	153.27	493.19	4.56	9.282	3.218	8.75	6.00
15.3	22.47	41.36	148.10	404.12	4.32	9.771	2.729	6.61	4.50



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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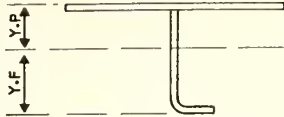
STEEL

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 30.6	151.09	673.85	744.02	10,807.04	13.05	14.525	16.038	44.44	22.50
25.5	126.17	637.46	645.28	9,800.74	13.21	15.375	15.188	37.11	18.75
20.4	101.15	525.27	616.22	8,666.44	13.33	16.499	14.064	29.75	15.00
17.85	88.70	467.30	601.55	8,037.92	13.35	17.201	13.362	26.09	13.14
30 x 27 x 30.6	143.44	666.33	687.25	10,339.86	13.00	15.045	15.518	42.19	22.50
25.5	119.80	588.89	638.17	9,360.59	13.14	15.895	14.668	35.23	18.75
20.4	96.05	485.33	609.51	8,257.79	13.22	17.015	13.548	28.25	15.00
17.85	84.23	431.81	595.02	7,647.59	13.21	17.710	12.853	24.77	13.14
30 x 24 x 30.6	135.79	630.37	657.65	9,837.03	12.92	15.605	14.958	39.94	22.50
25.5	113.42	540.26	629.98	8,888.95	13.03	16.453	14.110	33.36	18.75
20.4	90.95	445.36	601.77	7,822.37	13.07	17.564	12.999	26.75	15.00
17.85	79.76	396.30	587.51	7,233.12	13.05	18.251	12.312	23.46	13.14
30 x 21 x 30.6	128.14	573.39	647.53	9,294.31	12.80	16.210	14.353	37.69	22.50
25.5	107.05	491.56	620.42	8,382.28	12.88	17.052	13.511	31.48	18.75
20.4	85.85	405.35	592.75	7,357.43	12.89	18.151	12.412	25.25	15.00
17.85	75.30	360.77	578.75	6,792.18	12.85	18.827	11.736	22.15	13.14
30 x 18 x 30.6	120.49	516.30	635.56	8,706.74	12.64	16.864	13.699	35.44	22.50
25.5	100.67	442.80	609.12	7,836.55	12.69	17.698	12.865	29.61	18.75
20.4	80.75	365.31	582.11	6,859.89	12.66	18.779	11.784	23.75	15.00
17.85	70.83	325.21	568.42	6,322.18	12.60	19.441	11.122	20.83	13.14
30 x 15 x 30.6	112.84	459.11	621.20	8,068.54	12.43	17.574	12.989	33.19	22.50
25.5	94.30	393.97	595.58	7,247.05	12.45	18.395	12.168	27.73	18.75
20.4	75.65	325.22	569.36	6,326.18	12.38	19.452	11.111	22.25	15.00
17.85	66.36	289.62	556.04	5,820.12	12.29	20.096	10.467	19.52	13.14
30 x 12 x 30.6	105.19	401.81	603.64	7,372.87	12.15	18.349	12.214	30.94	22.50
25.5	87.92	345.07	579.03	6,608.30	12.13	19.150	11.413	25.86	18.75
20.4	70.55	285.10	553.80	5,752.22	12.03	20.176	10.387	20.75	15.00
17.85	61.89	254.00	540.95	5,282.62	11.91	20.798	9.765	18.20	13.14
30 x 9 x 30.6	97.54	344.41	581.68	6,611.59	11.77	19.197	11.366	28.69	22.50
25.5	81.55	296.11	558.37	5,913.86	11.73	19.972	10.591	23.98	18.75
20.4	65.45	244.94	534.39	5,133.26	11.58	20.957	9.606	19.25	15.00
17.85	57.43	218.36	522.15	4,705.78	11.45	21.551	9.012	16.89	13.14
30 x 6 x 30.6	89.89	286.91	553.44	5,774.95	11.27	20.128	10.435	26.44	22.50
25.5	75.17	247.08	531.83	5,156.10	11.20	20.868	9.695	22.11	18.75
20.4	60.35	204.74	509.51	4,463.81	11.02	21.802	8.761	17.75	15.00
17.85	52.96	182.69	498.05	4,085.13	10.87	22.361	8.202	15.58	13.14
27 x 27 x 30.6	135.79	588.18	607.04	8,233.93	11.82	13.564	13.999	39.94	20.25
25.5	113.42	520.14	565.28	7,466.39	11.94	14.355	13.208	33.36	16.87
20.4	90.95	428.51	541.87	6,595.39	12.00	15.392	12.171	26.75	13.50
17.85	79.76	381.12	530.01	6,110.74	11.99	16.033	11.530	23.46	11.83
27 x 24 x 30.6	128.14	555.60	580.82	7,826.90	11.75	14.087	13.476	37.69	20.25
25.5	107.05	476.13	558.28	7,082.89	11.84	14.876	12.687	31.48	16.87
20.4	85.85	392.33	535.22	6,239.80	11.87	15.905	11.658	25.25	13.50
17.85	75.30	348.99	523.51	5,771.60	11.84	16.538	11.025	22.15	11.83
27 x 21 x 30.6	120.49	504.05	572.18	7,386.25	11.65	14.654	12.909	35.44	20.25
25.5	100.67	432.05	550.07	6,669.82	11.71	15.438	12.125	29.61	16.87
20.4	80.75	356.11	527.42	5,859.28	11.70	16.454	11.109	23.75	13.50
17.85	70.83	316.82	515.90	5,410.10	11.65	17.076	10.487	20.83	11.83
27 x 18 x 30.6	112.84	452.39	561.88	6,907.63	11.50	15.269	12.294	33.19	20.25
25.5	94.30	387.91	540.29	6,223.62	11.54	16.044	11.519	27.73	16.87
20.4	75.65	319.85	518.14	5,451.10	11.49	17.043	10.520	22.25	13.50
17.85	66.36	284.63	506.86	5,023.95	11.42	17.651	9.912	19.52	11.83

PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

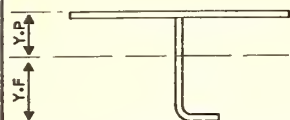
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STEEL

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 15 x 30.6	105.19	400.62	549.43	6,385.90	11.31	15.940	11.623	30.94	20.25
25.5	87.92	343.69	528.48	5,740.14	11.31	16.701	10.862	25.86	16.87
20.4	70.55	283.56	506.94	5,012.13	11.23	17.676	9.887	20.75	13.50
17.85	61.89	252.41	495.94	4,610.54	11.13	18.266	9.297	18.20	11.83
27 x 12 x 30.6	97.54	348.74	534.03	5,814.97	11.04	16.674	10.889	28.69	20.25
25.5	81.55	299.41	513.89	5,214.51	11.01	17.416	10.147	23.98	16.87
20.4	65.45	247.22	493.13	4,538.75	10.89	18.359	9.204	19.25	13.50
17.85	57.43	220.16	482.49	4,166.87	10.77	18.927	8.636	16.89	11.83
27 x 9 x 30.6	89.89	296.75	514.53	5,187.53	10.68	17.481	10.082	26.44	20.25
25.5	75.17	255.06	495.44	4,640.96	10.62	18.196	9.367	22.11	16.87
20.4	60.35	210.85	475.68	4,026.75	10.46	19.098	8.465	17.75	13.50
17.85	52.96	187.88	465.52	3,689.51	10.33	19.637	7.926	15.58	11.83
27 x 6 x 30.6	82.24	244.66	489.03	4,494.76	10.20	18.372	9.191	24.19	20.25
25.5	68.80	210.64	471.34	4,012.62	10.11	19.050	8.513	20.23	16.87
20.4	55.25	174.44	452.94	3,471.20	9.92	19.899	7.664	16.25	13.50
17.85	48.49	155.58	443.42	3,174.46	9.77	20.404	7.159	14.26	11.83
24 x 24 x 30.6	120.49	483.12	506.21	6,071.92	10.56	12.568	11.995	35.44	18.00
25.5	100.67	414.01	488.33	5,503.46	10.64	13.293	11.270	29.61	15.00
20.4	80.75	341.02	469.94	4,854.05	10.65	14.234	10.329	23.75	12.00
17.85	70.83	303.24	460.55	4,491.34	10.62	14.811	9.752	20.83	10.51
24 x 22 x 30.6	115.39	452.44	501.52	5,842.53	10.50	12.913	11.650	33.94	18.00
25.5	96.42	387.76	483.85	5,287.24	10.56	13.635	10.928	28.36	15.00
20.4	77.35	319.44	465.65	4,653.80	10.56	14.569	9.994	22.75	12.00
17.85	67.85	284.08	456.34	4,300.62	10.50	15.139	9.424	19.96	10.51
24 x 20 x 30.6	110.29	421.70	496.25	5,599.76	10.43	13.279	11.284	32.44	18.00
25.5	92.17	361.47	478.81	5,059.31	10.47	13.996	10.567	27.11	15.00
20.4	73.95	297.84	460.82	4,443.72	10.44	14.920	9.643	21.75	12.00
17.85	64.87	264.90	451.61	4,101.12	10.37	15.482	9.081	19.08	10.51
24 x 18 x 30.6	105.19	390.92	490.28	5,342.43	10.34	13.666	10.897	30.94	18.00
25.5	87.92	335.15	473.10	4,818.69	10.36	14.378	10.185	25.86	15.00
20.4	70.55	276.22	455.36	4,223.08	10.30	15.289	9.274	20.75	12.00
17.85	61.89	245.70	446.26	3,892.23	10.23	15.841	8.722	18.20	10.51
24 x 16 x 30.6	100.09	360.08	483.46	5,069.16	10.23	14.078	10.485	29.44	18.00
25.5	83.67	308.80	466.58	4,564.28	10.23	14.781	9.782	24.61	15.00
20.4	67.15	254.58	449.13	3,991.06	10.15	15.677	8.886	19.75	12.00
17.85	58.92	226.50	440.16	3,673.27	10.05	16.218	8.345	17.33	10.51
24 x 14 x 30.6	94.99	329.20	475.59	4,778.44	10.09	14.516	10.047	27.94	18.00
25.5	79.42	282.42	459.07	4,294.86	10.07	15.207	9.356	23.36	15.00
20.4	63.75	232.93	441.95	3,746.75	9.96	16.085	8.478	18.75	12.00
17.85	55.94	207.28	433.13	3,443.51	9.85	16.613	7.950	16.45	10.51
24 x 12 x 30.6	89.89	298.26	466.40	4,468.54	9.91	14.982	9.581	26.44	18.00
25.5	75.17	256.01	450.31	4,009.08	9.87	15.660	8.903	22.11	15.00
20.4	60.35	211.26	433.59	3,489.16	9.74	16.516	8.047	17.75	12.00
17.85	52.96	188.05	424.95	3,202.10	9.62	17.028	7.535	15.58	10.51
24 x 10 x 30.6	84.79	267.27	455.55	4,137.50	9.70	15.481	9.082	24.94	18.00
25.5	70.92	229.56	439.97	3,705.37	9.64	16.141	8.422	20.86	15.00
20.4	56.95	189.57	423.73	3,217.16	9.48	16.971	7.592	16.75	12.00
17.85	49.98	168.81	415.32	2,948.16	9.35	17.465	7.098	14.70	10.51
24 x 8 x 30.6	79.69	236.23	442.53	3,783.07	9.44	16.014	8.549	23.44	18.00
25.5	66.67	203.08	427.58	3,382.02	9.36	16.653	7.910	19.61	15.00
20.4	53.55	167.87	411.94	2,929.52	9.18	17.451	7.112	15.75	12.00
17.85	47.00	149.55	403.80	2,680.66	9.03	17.924	6.639	13.82	10.51



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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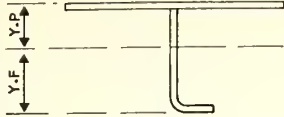
STEEL

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 6 x 30.6	74.59	205.14	426.62	3,402.68	9.11	16.587	7.976	21.94	18.00
25.5	62.42	176.58	412.46	3,037.04	9.01	17.200	7.363	18.36	15.00
20.4	50.15	146.14	397.57	2,624.85	8.82	17.961	6.602	14.75	12.00
17.85	44.02	130.29	389.79	2,398.51	8.66	18.410	6.153	12.95	10.51
21 x 20 x 30.6	102.64	358.98	425.67	4,199.30	9.24	11.698	9.865	30.19	15.75
25.5	85.80	307.72	412.25	3,799.35	9.27	12.347	9.216	25.23	13.12
20.4	68.85	253.46	398.30	3,340.01	9.22	13.177	8.386	20.25	10.50
17.85	60.40	225.36	391.10	3,082.96	9.15	13.680	7.883	17.77	9.20
21 x 18 x 30.6	97.54	331.92	420.73	4,000.88	9.16	12.054	9.509	28.69	15.75
25.5	81.55	284.56	407.50	3,613.01	9.17	12.697	8.866	23.98	13.12
20.4	65.45	234.44	393.71	3,168.50	9.10	13.515	8.048	19.25	10.50
17.85	57.43	208.47	386.57	2,920.34	9.02	14.009	7.554	16.89	9.20
21 x 16 x 30.6	92.44	304.80	415.06	3,789.58	9.06	12.433	9.130	27.19	15.75
25.5	77.30	261.38	402.03	3,415.53	9.04	13.067	8.496	22.73	13.12
20.4	62.05	215.40	388.44	2,987.79	8.95	13.871	7.692	18.25	10.50
17.85	54.45	191.56	381.37	2,749.59	8.86	14.353	7.210	16.01	9.20
21 x 14 x 30.6	87.34	277.63	408.47	3,564.10	8.93	12.837	8.726	25.69	15.75
25.5	73.05	238.16	395.69	3,205.85	8.90	13.461	8.102	21.48	13.12
20.4	58.65	196.34	382.31	2,797.12	8.78	14.247	7.316	17.25	10.50
17.85	51.47	174.65	375.35	2,570.08	8.67	14.716	6.847	15.14	9.20
21 x 12 x 30.6	82.24	250.41	400.70	3,322.98	8.77	13.270	8.293	24.19	15.75
25.5	68.80	214.91	388.22	2,982.82	8.72	13.880	7.683	20.23	13.12
20.4	55.25	177.26	375.12	2,595.64	8.58	14.644	6.919	16.25	10.50
17.85	48.49	157.72	368.27	2,381.13	8.46	15.097	6.466	14.26	9.20
21 x 10 x 30.6	77.14	223.14	391.42	3,064.51	8.57	13.734	7.829	22.69	15.75
25.5	64.55	191.62	379.32	2,745.13	8.50	14.326	7.237	18.98	13.12
20.4	51.85	158.16	366.55	2,382.40	8.34	15.064	6.499	15.25	10.50
17.85	45.51	140.78	359.85	2,181.95	8.21	15.500	6.063	13.39	9.20
21 x 8 x 30.6	72.04	195.81	380.14	2,786.77	8.33	14.232	7.331	21.19	15.75
25.5	60.30	168.30	368.51	2,491.27	8.23	14.803	6.760	17.73	13.12
20.4	48.45	139.04	356.17	2,156.34	8.05	15.509	6.054	14.25	10.50
17.85	42.53	123.82	349.66	1,971.72	7.91	15.924	5.639	12.51	9.20
21 x 6 x 30.6	66.94	168.43	366.14	2,487.50	8.02	14.769	6.794	19.69	15.75
25.5	56.05	144.95	355.11	2,219.54	7.91	15.313	6.250	16.48	13.12
20.4	45.05	119.90	343.33	1,916.28	7.71	15.982	5.581	13.25	10.50
17.85	39.56	106.85	337.08	1,749.46	7.55	16.373	5.190	11.63	9.20
18 x 18 x 30.6	89.89	275.43	353.21	2,872.68	7.95	10.430	8.133	26.44	13.50
25.5	75.17	236.18	343.45	2,597.79	7.95	10.999	7.564	22.11	11.25
20.4	60.35	194.55	333.14	2,279.94	7.87	11.719	6.844	17.75	9.00
15.3	45.42	150.34	321.90	1,902.32	7.66	12.653	5.910	13.36	6.75
18 x 16 x 30.6	84.79	252.09	348.63	2,715.79	7.86	10.773	7.790	24.94	13.50
25.5	70.92	216.21	338.99	2,450.51	7.84	11.334	7.229	20.86	11.25
20.4	56.95	178.13	328.79	2,144.70	7.74	12.040	6.523	16.75	9.00
15.3	42.87	137.69	317.60	1,782.99	7.51	12.949	5.614	12.61	6.75
18 x 14 x 30.6	79.69	228.70	343.25	2,547.81	7.75	11.140	7.423	23.44	13.50
25.5	66.67	196.20	333.77	2,293.71	7.71	11.691	6.872	19.61	11.25
20.4	53.55	161.70	323.69	2,001.68	7.59	12.379	6.184	15.75	9.00
15.3	40.32	125.04	312.57	1,657.88	7.33	13.259	5.304	11.86	6.75
18 x 12 x 30.6	74.59	205.25	336.85	2,367.53	7.60	11.535	7.028	21.94	13.50
25.5	62.42	176.16	327.56	2,126.43	7.54	12.071	6.492	18.36	11.25
20.4	50.15	145.25	317.64	1,850.19	7.40	12.738	5.825	14.75	9.00
15.3	37.77	112.37	306.62	1,526.53	7.12	13.584	4.979	11.11	6.75

PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

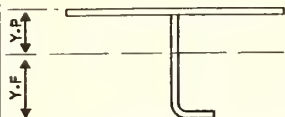
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STEEL

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 10 x 30.6	69.49	181.75	329.12	2,173.55	7.42	11.959	6.604	20.44	13.50
25.5	58.17	156.08	320.07	1,947.58	7.34	12.478	6.085	17.11	11.25
20.4	46.75	128.78	310.35	1,689.46	7.18	13.119	5.444	13.75	9.00
15.3	35.22	99.70	299.46	1,388.48	6.87	13.926	4.637	10.36	6.75
18 x 8 x 30.6	64.39	158.19	319.58	1,964.24	7.19	12.417	6.146	18.94	13.50
25.5	53.92	135.97	310.84	1,755.90	7.10	12.914	5.649	15.86	11.25
20.4	43.35	112.29	301.39	1,518.61	6.91	13.524	5.039	12.75	9.00
15.3	32.67	87.02	290.69	1,243.19	6.59	14.286	4.277	9.61	6.75
18 x 6 x 30.6	59.29	134.58	307.51	1,737.72	6.90	12.912	5.651	17.44	13.50
25.5	49.67	115.82	299.19	1,549.98	6.79	13.382	5.181	14.61	11.25
20.4	39.95	95.78	290.12	1,336.65	6.59	13.956	4.607	11.75	9.00
15.3	30.12	74.33	279.69	1,090.09	6.25	14.666	3.897	8.86	6.75
18 x 4 x 30.6	54.19	110.91	291.76	1,491.77	6.53	13.450	5.113	15.94	13.50
25.5	45.42	95.64	284.04	1,328.17	6.40	13.887	4.676	13.36	11.25
20.4	36.55	79.25	275.50	1,142.47	6.19	14.416	4.147	10.75	9.00
15.3	27.57	61.63	265.51	928.53	5.85	15.066	3.497	8.11	6.75
16 x 12 x 30.6	69.49	176.67	295.29	1,830.82	6.81	10.363	6.200	20.44	12.00
25.5	58.17	151.66	287.86	1,645.18	6.75	10.848	5.715	17.11	10.00
20.4	46.75	125.05	279.81	1,431.43	6.61	11.447	5.116	13.75	8.00
15.3	35.22	96.71	270.64	1,180.14	6.34	12.202	4.361	10.36	6.00
16 x 10 x 30.6	64.39	155.72	288.56	1,675.20	6.64	10.758	5.805	18.94	12.00
25.5	53.92	133.75	281.29	1,501.42	6.56	11.225	5.338	15.86	10.00
20.4	43.35	110.35	273.36	1,302.08	6.40	11.800	4.763	12.75	8.00
15.3	32.67	85.41	264.23	1,069.03	6.11	12.517	4.046	9.61	6.00
16 x 8 x 30.6	59.29	134.72	280.16	1,506.78	6.43	11.185	5.378	17.44	12.00
25.5	49.67	115.81	273.11	1,346.98	6.33	11.631	4.932	14.61	10.00
20.4	39.95	95.63	265.35	1,164.33	6.15	12.175	4.388	11.75	8.00
15.3	30.12	74.09	256.30	951.94	5.84	12.849	3.714	8.86	6.00
16 x 6 x 30.6	54.19	113.66	269.39	1,323.92	6.15	11.649	4.914	15.94	12.00
25.5	45.42	97.83	262.65	1,180.62	6.04	12.068	4.495	13.36	10.00
20.4	36.55	80.90	255.14	1,017.33	5.85	12.576	3.987	10.75	8.00
15.3	27.57	62.76	246.23	828.37	5.53	13.199	3.364	8.11	6.00
15 x 12 x 30.6	66.94	162.85	274.79	1,591.32	6.41	9.772	5.791	19.69	11.25
25.5	56.05	139.82	268.23	1,430.38	6.35	10.230	5.333	16.48	9.37
20.4	45.05	115.29	261.03	1,244.58	6.21	10.795	4.768	13.25	7.50
15.3	33.95	89.16	252.70	1,025.73	5.95	11.504	4.059	9.98	5.62
15 x 11 x 30.6	64.39	153.02	271.84	1,523.75	6.34	9.958	5.605	18.94	11.25
25.5	53.92	131.42	265.33	1,367.78	6.26	10.408	5.155	15.86	9.37
20.4	43.35	108.39	258.17	1,188.09	6.12	10.961	4.602	12.75	7.50
15.3	32.67	83.85	249.84	977.08	5.84	11.652	3.911	9.61	5.62
15 x 10 x 30.6	61.84	143.19	268.55	1,453.46	6.25	10.151	5.412	18.19	11.25
25.5	51.80	123.01	262.11	1,302.90	6.17	10.592	4.971	15.23	9.37
20.4	41.65	101.49	254.99	1,129.80	6.01	11.132	4.431	12.25	7.50
15.3	31.40	78.54	246.67	927.13	5.73	11.804	3.759	9.23	5.62
15 x 9 x 30.6	59.29	133.34	264.87	1,380.28	6.15	10.352	5.211	17.44	11.25
25.5	49.67	114.59	258.51	1,235.61	6.06	10.783	4.780	14.61	9.37
20.4	39.95	94.58	251.45	1,069.62	5.90	11.309	4.254	11.75	7.50
15.3	30.12	73.23	243.13	875.84	5.60	11.961	3.602	8.86	5.62
15 x 8 x 30.6	56.74	123.47	260.72	1,304.02	6.04	10.561	5.002	16.69	11.25
25.5	47.55	106.16	254.45	1,165.77	5.94	10.982	4.581	13.98	9.37
20.4	38.25	87.67	247.46	1,007.44	5.77	11.492	4.071	11.25	7.50
15.3	28.85	67.91	239.16	823.15	5.47	12.121	3.442	8.48	5.62



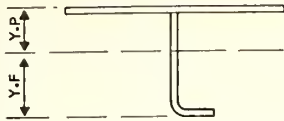
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	113.59	256.01	1,224.49	5.92	10.780	4.783	15.94	11.25
25.5	45.42	97.72	249.85	1,093.23	5.81	11.187	4.376	13.36	9.37
20.4	36.55	80.75	242.94	943.18	5.63	11.681	3.882	10.75	7.50
15.3	27.57	62.59	234.67	769.00	5.32	12.286	3.277	8.11	5.62
14 x 10 x 30.6	59.29	130.97	248.72	1,249.44	5.85	9.540	5.023	17.44	10.50
25.5	49.67	112.54	243.05	1,120.25	5.77	9.954	4.609	14.61	8.75
20.4	39.95	92.87	236.71	971.34	5.62	10.459	4.104	11.75	7.00
15.3	30.12	71.87	229.14	796.73	5.35	11.086	3.477	8.86	5.25
14 x 9 x 30.6	56.74	121.77	245.31	1,185.09	5.76	9.732	4.831	16.69	10.50
25.5	47.55	104.67	239.70	1,061.03	5.67	10.137	4.426	13.98	8.75
20.4	38.25	86.41	233.39	918.35	5.51	10.628	3.935	11.25	7.00
15.3	28.85	66.90	225.80	751.58	5.23	11.234	3.329	8.48	5.25
14 x 8 x 30.6	54.19	112.55	241.45	1,117.98	5.66	9.933	4.630	15.94	10.50
25.5	45.42	96.80	235.91	999.52	5.56	10.326	4.237	13.36	8.75
20.4	36.55	79.94	229.64	863.59	5.39	10.802	3.761	10.75	7.00
15.3	27.57	61.93	222.05	705.18	5.10	11.387	3.176	8.11	5.25
14 x 7 x 30.6	51.64	103.32	237.05	1,047.93	5.53	10.142	4.421	15.19	10.50
25.5	43.30	88.91	231.60	935.60	5.43	10.523	4.040	12.73	8.75
20.4	34.85	73.47	225.38	806.95	5.25	10.983	3.580	10.25	7.00
15.3	26.30	56.95	217.79	657.48	4.96	11.544	3.019	7.73	5.25
13 x 9 x 30.6	54.19	110.54	225.92	1,006.68	5.37	9.107	4.456	15.94	9.75
25.5	45.42	95.05	221.01	901.47	5.28	9.484	4.079	13.36	8.12
20.4	36.55	78.48	215.40	780.18	5.12	9.941	3.622	10.75	6.50
15.3	27.57	60.77	208.49	638.18	4.85	10.502	3.061	8.11	4.87
13 x 8 x 30.6	51.64	101.97	222.35	948.21	5.26	9.299	4.264	15.19	9.75
25.5	43.30	87.73	217.49	847.84	5.17	9.665	3.898	12.73	8.12
20.4	34.85	72.47	211.89	732.41	5.00	10.107	3.456	10.25	6.50
15.3	26.30	56.14	204.96	597.72	4.73	10.647	2.916	7.73	4.87
13 x 7 x 30.6	49.09	93.39	218.26	887.11	5.15	9.499	4.064	14.44	9.75
25.5	41.17	80.39	213.46	792.06	5.04	9.853	3.710	12.11	8.12
20.4	33.15	66.45	207.89	682.98	4.87	10.278	3.285	9.75	6.50
15.3	25.02	51.51	200.93	556.11	4.59	10.795	2.768	7.36	4.87
12 x 9 x 30.6	51.64	99.64	206.70	844.62	4.97	8.477	4.086	15.19	9.00
25.5	43.30	85.72	202.44	756.54	4.88	8.826	3.737	12.73	7.50
20.4	34.85	70.80	197.47	654.73	4.73	9.247	3.316	10.25	6.00
15.3	26.30	54.83	191.20	535.34	4.47	9.763	2.800	7.73	4.50
12 x 8 x 30.6	49.09	91.73	203.41	794.25	4.87	8.658	3.905	14.44	9.00
25.5	41.17	78.95	199.18	710.32	4.78	8.997	3.566	12.11	7.50
20.4	33.15	65.24	194.21	613.54	4.62	9.404	3.159	9.75	6.00
15.3	25.02	50.55	187.88	500.46	4.36	9.899	2.664	7.36	4.50
12 x 7 x 30.6	46.54	83.81	199.63	741.58	4.76	8.848	3.715	13.69	9.00
25.5	39.05	72.18	195.44	662.19	4.66	9.175	3.388	11.48	7.50
20.4	31.45	59.68	190.47	570.89	4.49	9.566	2.997	9.25	6.00
15.3	23.75	46.28	184.09	464.57	4.23	10.039	2.524	6.98	4.50
12 x 6 x 30.6	43.99	75.87	195.24	686.43	4.63	9.047	3.516	12.94	9.00
25.5	36.92	65.39	191.10	612.06	4.53	9.360	3.203	10.86	7.50
20.4	29.75	54.11	186.14	526.71	4.36	9.733	2.830	8.75	6.00
15.3	22.47	41.99	179.72	427.64	4.08	10.183	2.380	6.61	4.50



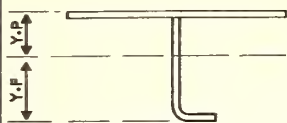
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 30.6	151.09	761.77	787.00	11,854.58	13.22	15.562	15.063	44.44	22.50
25.5	126.17	651.39	758.41	10,731.58	13.31	16.475	14.150	37.11	18.75
20.4	101.15	535.45	729.15	9,454.91	13.33	17.658	12.967	29.75	15.00
17.85	88.70	475.67	714.28	8,744.28	13.29	18,383	12.242	26.09	13.14
30 x 27 x 30.6	143.44	703.73	778.26	11,317.74	13.13	16.083	14.542	42.19	22.50
25.5	119.80	601.84	750.06	10,226.07	13.20	16.991	13.634	35.23	18.75
20.4	96.05	494.80	721.17	8,987.14	13.19	18.163	12.462	28.25	15.00
17.85	84.23	439.61	706.47	8,298.92	13.12	18.878	11.747	24.77	13.14
30 x 24 x 30.6	135.79	645.59	768.18	10,742.78	13.02	16.640	13.985	39.94	22.50
25.5	113.42	552.23	740.44	9,687.20	13.06	17.542	13.083	33.36	18.75
20.4	90.95	454.12	711.98	8,491.40	13.01	18.699	11.926	26.75	15.00
17.85	79.76	403.52	697.47	7,828.61	12.92	19.401	11.224	23.46	13.14
30 x 21 x 30.6	128.14	587.36	756.42	10,125.51	12.87	17.239	13.386	37.69	22.50
25.5	107.05	502.56	729.22	9,111.54	12.88	18.130	12.495	31.48	18.75
20.4	85.85	413.41	701.27	7,965.12	12.79	19.267	11.358	25.25	15.00
17.85	75.30	367.41	686.99	7,331.18	12.68	19,954	10.671	22.15	13.14
30 x 18 x 30.6	120.49	529.04	742.53	9,461.07	12.68	17.883	12.742	35.44	22.50
25.5	100.67	452.84	715.98	8,495.19	12.65	18.760	11.865	29.61	18.75
20.4	80.75	372.67	688.64	7,405.38	12.53	19.871	10.754	23.75	15.00
17.85	70.83	331.28	674.64	6,804.23	12.40	20.539	10.086	20.83	13.14
30 x 15 x 30.6	112.84	470.63	725.87	8,743.84	12.43	18.579	12.046	33.19	22.50
25.5	94.30	403.05	700.11	7,833.67	12.37	19.436	11.189	27.73	18.75
20.4	75.65	331.89	673.51	6,808.90	12.21	20.515	10.110	22.25	15.00
17.85	66.36	295.12	659.86	6,245.04	12.06	21.161	9.464	19.52	13.14
30 x 12 x 30.6	105.19	412.12	705.52	7,967.26	12.10	19.332	11.293	30.94	22.50
25.5	87.92	353.21	680.74	7,121.85	12.02	20.163	10.462	25.86	18.75
20.4	70.55	291.08	655.08	6,171.92	11.82	21.203	9.422	20.75	15.00
17.85	61.89	258.94	641.87	5,650.57	11.65	21.822	8.803	18.20	13.14
30 x 9 x 30.6	97.54	353.52	680.10	7,123.65	11.69	20.151	10.474	28.69	22.50
25.5	81.55	303.31	656.58	6,353.74	11.57	20.948	9.677	23.98	18.75
20.4	65.45	250.24	632.12	5,490.18	11.34	21.940	8.685	19.25	15.00
17.85	57.43	222.74	619.46	5,017.36	11.15	22.525	8.100	16.89	13.14
30 x 6 x 30.6	89.89	294.83	647.43	6,203.94	11.15	21.043	9.582	26.44	22.50
25.5	75.17	253.35	625.58	5,522.40	11.01	21.797	8.828	22.11	18.75
20.4	60.35	209.37	602.72	4,758.79	10.75	22.730	7.895	17.75	15.00
17.85	52.96	186.52	590.82	4,341.50	10.55	23.277	7.348	15.58	13.14
27 x 27 x 30.6	135.79	621.13	689.42	9,026.45	11.93	14.532	13.093	39.94	20.25
25.5	113.42	531.12	666.45	8,165.11	11.99	15.373	12.252	33.36	16.87
20.4	90.95	436.47	642.80	7,181.25	11.96	16.453	11.172	26.75	13.50
17.85	79.76	387.65	630.69	6,632.33	11.89	17.109	10.516	23.46	11.83
27 x 24 x 30.6	128.14	568.56	680.80	8,558.78	11.83	15.053	12.572	37.69	20.25
25.5	107.05	486.24	658.17	7,725.22	11.86	15.888	11.737	31.48	16.87
20.4	85.85	399.67	634.82	6,775.27	11.80	16.952	10.673	25.25	13.50
17.85	75.30	355.01	622.85	6,246.65	11.71	17.596	10.029	22.15	11.83
27 x 21 x 30.6	120.49	515.90	670.68	8,055.38	11.70	15.614	12.011	35.44	20.25
25.5	100.67	441.31	648.46	7,254.24	11.69	16.438	11.187	29.61	16.87
20.4	80.75	362.83	625.48	6,343.49	11.59	17.483	10.142	23.75	13.50
17.85	70.83	322.34	613.67	5,838.09	11.48	18.112	9.513	20.83	11.83
27 x 18 x 30.6	112.84	463.14	658.64	7,511.99	11.52	16.220	11.405	33.19	20.25
25.5	94.30	396.31	636.91	6,748.76	11.48	17.029	10.596	27.73	16.87
20.4	75.65	325.97	614.38	5,883.36	11.35	18.049	9.576	22.25	13.50
17.85	66.36	289.65	602.77	5,404.53	11.22	18.659	8.966	19.52	11.83



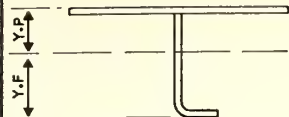
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 15 x 30.6	105.19	410.28	644.08	6,923.63	11.28	16.875	10.750	30.94	20.25
25.5	87.92	351.26	622.95	6,204.83	11.22	17.665	9.960	25.86	16.87
20.4	70.55	289.07	600.99	5,391.99	11.05	18.653	8.972	20.75	13.50
17.85	61.89	256.94	589.63	4,943.61	10.90	19.241	8.384	18.20	11.83
27 x 12 x 30.6	97.54	357.33	626.11	6,284.49	10.98	17.588	10.037	28.69	20.25
25.5	81.55	306.14	605.75	5,617.89	10.88	18.351	9.274	23.98	16.87
20.4	65.45	252.13	584.50	4,866.09	10.68	19.300	8.325	19.25	13.50
17.85	57.43	224.20	573.46	4,452.66	10.51	19.860	7.765	16.89	11.83
27 x 9 x 30.6	89.89	304.27	603.36	5,587.70	10.58	18.364	9.261	26.44	20.25
25.5	75.17	260.96	584.01	4,982.63	10.46	19.093	8.532	22.11	16.87
20.4	60.35	215.16	563.70	4,301.90	10.22	19.994	7.631	17.75	13.50
17.85	52.96	191.44	553.09	3,928.65	10.03	20.522	7.103	15.58	11.83
27 x 6 x 30.6	82.24	251.12	573.66	4,825.09	10.07	19.214	8.411	24.19	20.25
25.5	68.80	215.73	555.67	4,292.84	9.91	19.899	7.726	20.23	16.87
20.4	55.25	178.16	536.66	3,695.06	9.65	20.740	6.885	16.25	13.50
17.85	48.49	158.65	526.64	3,368.10	9.45	21.230	6.395	14.26	11.83
24 x 24 x 30.6	120.49	493.98	595.50	6,648.86	10.63	13.460	11.165	35.44	18.00
25.5	100.67	422.41	577.50	6,007.60	10.64	14.222	10.403	29.61	15.00
20.4	80.75	347.06	558.80	5,271.97	10.57	15.190	9.435	23.75	12.00
17.85	70.83	308.18	549.12	4,860.86	10.48	15.773	8.852	20.83	10.51
24 x 22 x 30.6	115.39	462.64	589.96	6,385.26	10.55	13.802	10.823	33.94	18.00
25.5	96.42	395.65	572.15	5,759.88	10.54	14.558	10.067	28.36	15.00
20.4	77.35	325.12	553.60	5,043.90	10.45	15.514	9.111	22.75	12.00
17.85	67.85	288.72	543.99	4,644.64	10.35	16.087	8.538	19.96	10.51
24 x 20 x 30.6	110.29	431.25	583.74	6,107.51	10.45	14.162	10.463	32.44	18.00
25.5	92.17	368.87	566.13	5,499.90	10.43	14.910	9.715	27.11	15.00
20.4	73.95	303.17	547.77	4,805.74	10.31	15.852	8.773	21.75	12.00
17.85	64.87	269.26	538.23	4,419.52	10.20	16.414	8.211	19.08	10.51
24 x 18 x 30.6	105.19	399.82	576.69	5,814.44	10.34	14.543	10.082	30.94	18.00
25.5	87.92	342.06	559.33	5,226.74	10.30	15.280	9.345	25.86	15.00
20.4	70.55	281.20	541.17	4,556.80	10.15	16.205	8.420	20.75	12.00
17.85	61.89	249.78	531.72	4,184.92	10.02	16.754	7.871	18.20	10.51
24 x 16 x 30.6	100.09	368.35	568.64	5,504.75	10.20	14.944	9.681	29.44	18.00
25.5	83.67	315.22	551.56	4,939.37	10.14	15.670	8.955	24.61	15.00
20.4	67.15	259.22	533.65	4,296.33	9.97	16.574	8.051	19.75	12.00
17.85	58.92	230.29	524.30	3,940.25	9.83	17.110	7.515	17.33	10.51
24 x 14 x 30.6	94.99	336.83	559.36	5,176.98	10.04	15.370	9.255	27.94	18.00
25.5	79.42	288.35	542.61	4,636.65	9.95	16.080	8.545	23.36	15.00
20.4	63.75	237.22	524.99	4,023.51	9.77	16.961	7.664	18.75	12.00
17.85	55.94	210.79	515.77	3,684.82	9.61	17.481	7.144	16.45	10.51
24 x 12 x 30.6	89.89	305.26	548.54	4,829.49	9.84	15.821	8.804	26.44	18.00
25.5	75.17	261.46	532.19	4,317.32	9.74	16.513	8.112	22.11	15.00
20.4	60.35	215.21	514.93	3,737.45	9.53	17.367	7.258	17.75	12.00
17.85	52.96	191.29	505.85	3,417.93	9.36	17.868	6.757	15.58	10.51
24 x 10 x 30.6	84.79	273.65	535.77	4,460.47	9.60	16.300	8.325	24.94	18.00
25.5	70.92	234.53	519.90	3,979.97	9.48	16.970	7.655	20.86	15.00
20.4	56.95	193.18	503.07	3,437.16	9.25	17.793	6.832	16.75	12.00
17.85	49.98	171.77	494.19	3,138.78	9.07	18.274	6.351	14.70	10.51
24 x 8 x 30.6	79.69	242.00	520.47	4,067.83	9.32	16.809	7.816	23.44	18.00
25.5	66.67	207.58	505.19	3,623.03	9.17	17.453	7.172	19.61	15.00
20.4	53.55	171.13	488.91	3,121.54	8.92	18.240	6.385	15.75	12.00
17.85	47.00	152.24	480.26	2,846.51	8.74	18.698	5.927	13.82	10.51



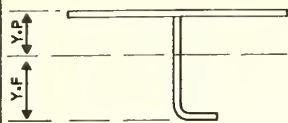
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 6 x 30.6	74.59	210.30	501.79	3,649.24	8.97	17.353	7.272	21.94	18.00
25.5	62.42	180.61	487.27	3,244.75	8.81	17.966	6.659	18.36	15.00
20.4	50.15	149.07	471.69	2,789.39	8.55	18.711	5.914	14.75	12.00
17.85	44.02	132.70	463.35	2,540.16	8.36	19.143	5.482	12.95	10.51
21 x 20 x 30.6	102.64	366.75	502.52	4,584.87	9.25	12.501	9.124	30.19	15.75
25.5	85.80	313.69	488.91	4,132.23	9.21	13.173	8.452	25.23	13.12
20.4	68.85	257.73	474.54	3,611.79	9.09	14.014	7.611	20.25	10.50
17.85	60.40	228.83	466.98	3,321.09	8.98	14.513	7.112	17.77	9.20
21 x 18 x 30.6	97.54	339.13	496.63	4,357.88	9.14	12.850	8.775	28.69	15.75
25.5	81.55	290.11	483.18	3,919.99	9.09	13.512	8.113	23.98	13.12
20.4	65.45	238.41	468.93	3,417.88	8.95	14.336	7.289	19.25	10.50
17.85	57.43	211.70	461.41	3,138.20	8.82	14.824	6.801	16.89	9.20
21 x 16 x 30.6	92.44	311.46	489.87	4,117.45	9.02	13.220	8.405	27.19	15.75
25.5	77.30	266.51	476.59	3,696.27	8.95	13.869	7.756	22.73	13.12
20.4	62.05	219.07	462.49	3,214.68	8.78	14.674	6.951	18.25	10.50
17.85	54.45	194.56	455.02	2,947.19	8.64	15.148	6.477	16.01	9.20
21 x 14 x 30.6	87.34	283.75	482.00	3,862.35	8.87	13.612	8.013	25.69	15.75
25.5	73.05	242.87	468.95	3,460.10	8.78	14.247	7.378	21.48	13.12
20.4	58.65	199.72	455.03	3,001.49	8.59	15.029	6.596	17.25	10.50
17.85	51.47	177.41	447.61	2,747.51	8.44	15.487	6.138	15.14	9.20
21 x 12 x 30.6	82.24	255.99	472.76	3,591.17	8.68	14.029	7.596	24.19	15.75
25.5	68.80	219.21	459.97	3,210.41	8.57	14.645	6.980	20.23	13.12
20.4	55.25	180.35	446.27	2,777.55	8.37	15.401	6.224	16.25	10.50
17.85	48.49	160.25	438.94	2,538.55	8.21	15.842	5.783	14.26	9.20
21 x 10 x 30.6	77.14	228.18	461.73	3,302.37	8.46	14.473	7.152	22.69	15.75
25.5	64.55	195.52	449.27	2,946.02	8.33	15.068	6.557	18.98	13.12
20.4	51.85	160.96	435.85	2,542.04	8.11	15.793	5.832	15.25	10.50
17.85	45.51	143.07	428.63	2,319.65	7.94	16.213	5.412	13.39	9.20
21 x 8 x 30.6	72.04	200.32	448.34	2,994.16	8.19	14.947	6.678	21.19	15.75
25.5	60.30	171.80	436.31	2,665.57	8.05	15.516	6.109	17.73	13.12
20.4	48.45	141.56	423.26	2,294.04	7.80	16.205	5.420	14.25	10.50
17.85	42.53	125.89	416.18	2,090.08	7.62	16.603	5.022	12.51	9.20
21 x 6 x 30.6	66.94	172.42	431.74	2,664.51	7.86	15.453	6.172	19.69	15.75
25.5	56.05	148.05	420.28	2,367.56	7.70	15.992	5.633	16.48	13.12
20.4	45.05	122.15	407.72	2,032.52	7.44	16.640	4.985	13.25	10.50
17.85	39.56	108.69	400.85	1,849.04	7.26	17.012	4.613	11.63	9.20
18 x 18 x 30.6	89.89	281.11	418.41	3,131.69	7.92	11.140	7.485	26.44	13.50
25.5	75.17	240.52	408.40	2,819.27	7.87	11.722	6.903	22.11	11.25
20.4	60.35	197.62	397.59	2,458.64	7.73	12.441	6.184	17.75	9.00
15.3	45.42	152.29	385.34	2,032.97	7.43	13.349	5.276	13.36	6.75
18 x 16 x 30.6	84.79	257.31	412.87	2,952.39	7.81	11.474	7.151	24.94	13.50
25.5	70.92	220.19	402.95	2,651.92	7.74	12.044	6.581	20.86	11.25
20.4	56.95	180.97	392.19	2,306.30	7.58	12.744	5.881	16.75	9.00
15.3	42.87	139.49	379.91	1,900.34	7.26	13.623	5.002	12.61	6.75
18 x 14 x 30.6	79.69	233.46	406.37	2,761.62	7.68	11.829	6.796	23.44	13.50
25.5	66.67	199.84	396.57	2,474.86	7.58	12.384	6.241	19.61	11.25
20.4	53.55	164.29	385.88	2,146.18	7.40	13.063	5.562	15.75	9.00
15.3	40.32	126.69	373.59	1,762.07	7.07	13.908	4.717	11.86	6.75
18 x 12 x 30.6	74.59	209.56	398.66	2,558.25	7.51	12.208	6.417	21.94	13.50
25.5	62.42	179.45	389.00	2,287.21	7.40	12.745	5.880	18.36	11.25
20.4	50.15	147.60	378.41	1,977.69	7.20	13.399	5.226	14.75	9.00
15.3	37.77	113.88	366.13	1,617.79	6.84	14.206	4.419	11.11	6.75



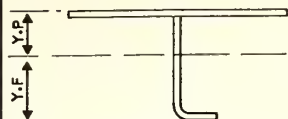
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30f

STEEL

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 10 x 30.6	69.49	185.61	389.34	2,340.98	7.30	12.612	6.013	20.44	13.50
25.5	58.17	159.04	379.88	2,088.00	7.18	13.129	5.496	17.11	11.25
20.4	46.75	130.90	369.43	1,800.13	6.96	13.752	4.873	13.75	9.00
15.3	35.22	101.06	357.17	1,467.12	6.59	14.517	4.108	10.36	6.75
18 x 8 x 30.6	64.39	161.61	377.87	2,108.32	7.05	13.046	5.579	18.94	13.50
25.5	53.92	138.60	368.68	1,876.11	6.91	13.536	5.089	15.86	11.25
20.4	43.35	114.17	358.42	1,612.76	6.68	14.125	4.500	12.75	9.00
15.3	32.67	88.23	346.23	1,309.61	6.29	14.843	3.782	9.61	6.75
18 x 6 x 30.6	59.29	137.57	363.40	1,858.60	6.74	13.510	5.115	17.44	13.50
25.5	49.67	118.13	354.57	1,650.30	6.59	13.971	4.654	14.61	11.25
20.4	39.95	97.44	344.61	1,414.74	6.34	14.520	4.105	11.75	9.00
15.3	30.12	75.40	332.58	1,144.78	5.95	15.183	3.442	8.86	6.75
16 x 12 x 30.6	69.49	180.22	350.14	1,978.07	6.71	10.976	5.649	20.44	12.00
25.5	58.17	154.37	342.32	1,768.76	6.60	11.458	5.167	17.11	10.00
20.4	46.75	126.97	333.56	1,528.91	6.41	12.041	4.584	13.75	8.00
15.3	35.22	97.94	323.06	1,249.49	6.08	12.757	3.868	10.36	6.00
16 x 10 x 30.6	64.39	158.88	341.94	1,803.47	6.52	11.351	5.274	18.94	12.00
25.5	53.92	136.17	334.24	1,608.50	6.40	11.813	4.812	15.86	10.00
20.4	43.35	112.07	325.52	1,386.01	6.19	12.367	4.258	12.75	8.00
15.3	32.67	86.51	314.95	1,128.29	5.84	13.043	3.582	9.61	6.00
16 x 8 x 30.6	59.29	137.50	331.74	1,616.07	6.29	11.754	4.871	17.44	12.00
25.5	49.67	117.94	324.20	1,437.71	6.15	12.190	4.435	14.61	10.00
20.4	39.95	97.16	315.57	1,234.99	5.92	12.712	3.913	11.75	8.00
15.3	30.12	75.07	304.96	1,001.47	5.57	13.341	3.284	8.86	6.00
15 x 12 x 30.6	66.94	166.05	326.13	1,719.20	6.31	10.353	5.272	19.69	11.25
25.5	56.05	142.26	319.15	1,537.47	6.21	10.808	4.817	16.48	9.37
20.4	45.05	117.02	311.23	1,328.83	6.02	11.355	4.270	13.25	7.50
15.3	33.95	90.27	301.55	1,085.50	5.70	12.025	3.600	9.98	5.62
15 x 11 x 30.6	64.39	156.05	322.51	1,643.17	6.23	10.530	5.095	18.94	11.25
25.5	53.92	133.72	315.57	1,467.51	6.11	10.975	4.650	15.86	9.37
20.4	43.35	110.03	307.64	1,266.30	5.92	11.509	4.116	12.75	7.50
15.3	32.67	84.90	297.90	1,032.35	5.59	12.160	3.465	9.61	5.62
15 x 10 x 30.6	61.84	146.03	318.48	1,564.40	6.13	10.713	4.912	18.19	11.25
25.5	51.80	125.17	311.58	1,395.29	6.01	11.147	4.478	15.23	9.37
20.4	41.65	103.03	303.66	1,202.02	5.80	11.667	3.958	12.25	7.50
15.3	31.40	79.53	293.86	977.98	5.47	12.297	3.328	9.23	5.62
15 x 9 x 30.6	59.29	136.00	313.98	1,482.73	6.02	10.903	4.722	17.44	11.25
25.5	49.67	116.62	307.13	1,320.70	5.89	11.325	4.300	14.61	9.37
20.4	39.95	96.03	299.22	1,135.92	5.68	11.829	3.796	11.75	7.50
15.3	30.12	74.16	289.37	922.34	5.34	12.438	3.187	8.86	5.62
15 x 8 x 30.6	56.74	125.95	308.92	1,398.02	5.90	11.099	4.526	16.69	11.25
25.5	47.55	108.06	302.13	1,243.62	5.76	11.509	4.116	13.98	9.37
20.4	38.25	89.02	294.24	1,067.91	5.55	11.996	3.629	11.25	7.50
15.3	28.85	68.78	284.34	865.40	5.21	12.581	3.044	8.48	5.62



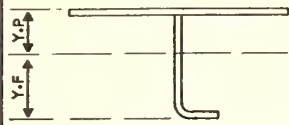
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	968.99	990.43	15,030.90	13.11	15.176	15.512	59.00	30.00
35.7	175.90	886.12	941.36	14,007.59	13.22	15.808	14.880	51.73	26.25
30.6	151.09	777.22	913.24	12,885.25	13.30	16.579	14.109	44.44	22.50
25.5	126.17	663.35	884.49	11,632.67	13.33	17.536	13.152	37.11	18.75
20.4	101.15	544.05	854.82	10,202.53	13.25	18.753	11.935	29.75	15.00
17.85	88.70	482.71	839.59	9,405.68	13.14	19.485	11.203	26.09	13.14
30 x 27 x 40.8	190.40	914.87	958.06	14,361.51	13.04	15.698	14.990	56.00	30.00
35.7	166.97	818.59	930.82	13,366.27	13.13	16.328	14.360	49.11	26.25
30.6	143.44	718.07	903.09	12,275.56	13.19	17.095	13.593	42.19	22.50
25.5	119.80	612.95	874.70	11,059.98	13.18	18.044	12.644	35.23	18.75
20.4	96.05	502.81	845.36	9,675.37	13.07	19.243	11.445	28.25	15.00
17.85	84.23	446.16	830.26	8,905.87	12.94	19.961	10.727	24.77	13.14
30 x 24 x 40.8	180.20	839.15	945.44	13,642.81	12.95	16.258	14.430	53.00	30.00
35.7	158.05	750.94	918.67	12,680.00	13.01	16.885	13.803	46.48	26.25
30.6	135.79	658.84	891.38	11,625.73	13.04	17.646	13.042	39.94	22.50
25.5	113.42	562.51	863.42	10,452.53	13.01	18.582	12.106	33.36	18.75
20.4	90.95	461.53	834.45	9,119.54	12.86	19.759	10.929	26.75	15.00
17.85	79.76	409.58	819.52	8,380.73	12.71	20.462	10.226	23.46	13.14
30 x 21 x 40.8	170.00	763.25	930.72	12,869.12	12.81	16.861	13.827	50.00	30.00
35.7	149.12	683.17	904.49	11,943.88	12.86	17.483	13.205	43.86	26.25
30.6	128.14	599.53	877.74	10,931.65	12.86	18.234	12.454	37.69	22.50
25.5	107.05	512.01	850.28	9,807.05	12.80	19.154	11.534	31.48	18.75
20.4	85.85	420.23	821.77	8,532.63	12.61	20.305	10.383	25.25	15.00
17.85	75.30	372.99	807.02	7,828.28	12.44	20.988	9.700	22.15	13.14
30 x 18 x 40.8	159.80	687.18	913.31	12,033.88	12.63	17.512	13.176	47.00	30.00
35.7	140.20	615.28	887.74	11,152.27	12.66	18.126	12.562	41.23	26.25
30.6	120.49	540.14	861.63	10,188.66	12.63	18.863	11.825	35.44	22.50
25.5	100.67	461.46	834.77	9,119.84	12.54	19.763	10.925	29.61	18.75
20.4	80.75	378.90	806.81	7,911.96	12.32	20.882	9.806	23.75	15.00
17.85	70.83	336.38	792.31	7,246.35	12.13	21.542	9.146	20.83	13.14
30 x 15 x 40.8	149.60	610.94	892.41	11,129.44	12.40	18.217	12.471	44.00	30.00
35.7	131.27	547.26	867.65	10,298.66	12.40	18.818	11.870	38.61	26.25
30.6	112.84	480.66	842.32	9,391.38	12.35	19.539	11.149	33.19	22.50
25.5	94.30	410.86	816.21	8,386.72	12.22	20.413	10.275	27.73	18.75
20.4	75.65	337.54	788.93	7,254.53	11.97	21.493	9.195	22.25	15.00
17.85	66.36	299.75	774.72	6,632.50	11.76	22.127	8.561	19.52	13.14
30 x 12 x 40.8	139.40	534.53	866.85	10,146.83	12.09	18.983	11.705	41.00	30.00
35.7	122.35	479.13	843.10	9,375.45	12.07	19.568	11.120	35.98	26.25
30.6	105.19	421.10	818.75	8,533.65	11.99	20.265	10.423	30.94	22.50
25.5	87.92	360.20	793.57	7,602.95	11.84	21.107	9.581	25.86	18.75
20.4	70.55	296.15	767.15	6,556.97	11.55	22.141	8.547	20.75	15.00
17.85	61.89	263.10	753.33	5,984.04	11.33	22.745	7.943	18.20	13.14
30 x 9 x 40.8	129.20	457.95	834.88	9,075.46	11.69	19.818	10.870	38.00	30.00
35.7	113.42	410.86	812.43	8,373.79	11.64	20.381	10.307	33.36	26.25
30.6	97.54	361.45	789.34	7,608.32	11.54	21.049	9.639	28.69	22.50
25.5	81.55	309.50	765.37	6,763.06	11.36	21.852	8.836	23.98	18.75
20.4	65.45	254.73	740.07	5,815.50	11.05	22.830	7.850	19.25	15.00
17.85	57.43	226.43	726.75	5,297.95	10.82	23.398	7.290	16.89	13.14
30 x 6 x 40.8	119.00	381.19	793.75	7,902.71	11.16	20.732	9.956	35.00	30.00
35.7	104.50	342.48	773.02	7,283.20	11.10	21.266	9.422	30.73	26.25
30.6	89.89	301.73	751.61	6,607.06	10.98	21.897	8.791	26.44	22.50
25.5	75.17	258.74	729.25	5,860.83	10.77	22.651	8.037	22.11	18.75
20.4	60.35	213.29	705.47	5,025.83	10.44	23.564	7.124	17.75	15.00
17.85	52.96	189.74	692.83	4,570.87	10.20	24.091	6.597	15.58	13.14
27 x 27 x 40.8	180.20	806.79	846.84	11,439.77	11.85	14.179	13.509	53.00	27.00
35.7	158.05	721.99	824.78	10,659.48	11.93	14.764	12.924	46.48	23.62



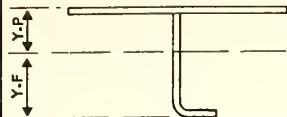
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	633.32	802.23	9,799.37	11.97	15.473	12.215	39.94	20.25
25.5	113.42	540.50	779.04	8,835.36	11.96	16.347	11.341	33.36	16.87
20.4	90.95	443.17	754.89	7,731.61	11.84	17.446	10.242	26.75	13.50
17.85	79.76	393.11	742.36	7,116.21	11.71	18.102	9.586	23.46	11.83
27 x 24 x 40.8	170.00	738.41	836.08	10,856.66	11.77	14.703	12.985	50.00	27.00
35.7	149.12	660.87	814.36	10,100.96	11.82	15.284	12.404	43.86	23.62
30.6	128.14	579.78	792.14	9,268.92	11.84	15.987	11.701	37.69	20.25
25.5	107.05	494.88	769.26	8,338.15	11.80	16.849	10.839	31.48	16.87
20.4	85.85	405.85	745.36	7,275.62	11.65	17.927	9.761	25.25	13.50
17.85	75.30	360.05	732.93	6,685.04	11.50	18.567	9.121	22.15	11.83
27 x 21 x 40.8	159.80	669.85	823.43	10,227.18	11.65	15.268	12.420	47.00	27.00
35.7	140.20	599.61	802.13	9,500.35	11.68	15.844	11.844	41.23	23.62
30.6	120.49	526.15	780.31	8,701.09	11.67	16.537	11.151	35.44	20.25
25.5	100.67	449.21	757.79	7,808.80	11.60	17.383	10.305	29.61	16.87
20.4	80.75	368.50	734.20	6,793.40	11.41	18.435	9.253	23.75	13.50
17.85	70.83	326.96	721.89	6,230.86	11.25	19.057	8.631	20.83	11.83
27 x 18 x 40.8	149.60	601.11	808.38	9,545.56	11.48	15.880	11.808	44.00	27.00
35.7	131.27	538.23	787.58	8,852.70	11.49	16.448	11.240	38.61	23.62
30.6	112.84	472.44	766.24	8,091.78	11.46	17.128	10.560	33.19	20.25
25.5	94.30	403.49	744.16	7,244.09	11.36	17.953	9.735	27.73	16.87
20.4	75.65	331.12	720.96	6,282.63	11.14	18.974	8.714	22.25	13.50
17.85	66.36	293.86	708.81	5,751.76	10.96	19.573	8.115	19.52	11.83
27 x 15 x 40.8	139.40	532.20	790.16	8,805.02	11.26	16.545	11.143	41.00	27.00
35.7	122.35	476.73	769.98	8,152.24	11.25	17.100	10.588	35.98	23.62
30.6	105.19	418.64	749.24	7,436.26	11.19	17.763	9.925	30.94	20.25
25.5	87.92	357.72	727.72	6,640.36	11.06	18.563	9.125	25.86	16.87
20.4	70.55	293.71	705.00	5,740.68	10.81	19.545	8.143	20.75	13.50
17.85	61.89	260.73	693.04	5,245.66	10.61	20.119	7.569	18.20	11.83
27 x 12 x 40.8	129.20	463.11	767.63	7,997.59	10.97	17.269	10.419	38.00	27.00
35.7	113.42	415.09	748.25	7,392.26	10.94	17.809	9.879	33.36	23.62
30.6	97.54	364.76	728.27	6,729.08	10.86	18.448	9.240	28.69	20.25
25.5	81.55	311.89	707.46	5,993.41	10.70	19.216	8.472	23.98	16.87
20.4	65.45	256.27	685.38	5,164.61	10.41	20.153	7.535	19.25	13.50
17.85	57.43	227.59	673.69	4,710.18	10.20	20.696	6.992	16.89	11.83
27 x 9 x 40.8	119.00	393.83	739.09	7,113.77	10.59	18.063	9.625	35.00	27.00
35.7	104.50	353.33	720.75	6,564.82	10.54	18.580	9.108	30.73	23.62
30.6	89.89	310.78	701.78	5,963.88	10.43	19.190	8.498	26.44	20.25
25.5	75.17	266.01	681.91	5,298.44	10.24	19.918	7.770	22.11	16.87
20.4	60.35	218.81	660.68	4,551.09	9.93	20.800	6.888	17.75	13.50
17.85	52.96	194.42	649.35	4,142.71	9.71	21.308	6.380	15.58	11.83
27 x 6 x 40.8	108.80	324.38	701.75	6,142.18	10.08	18.935	8.753	32.00	27.00
35.7	95.57	291.44	684.84	5,660.52	10.01	19.422	8.266	28.11	23.62
30.6	82.24	256.73	667.24	5,133.21	9.88	19.995	7.693	24.19	20.25
25.5	68.80	220.08	648.68	4,549.89	9.67	20.674	7.014	20.23	16.87
20.4	55.25	181.31	628.63	3,896.36	9.34	21.490	6.198	16.25	13.50
17.85	48.49	161.23	617.82	3,540.28	9.11	21.958	5.730	14.26	11.83
24 x 24 x 40.8	159.80	640.85	729.57	8,422.81	10.57	13.143	11.545	47.00	24.00
35.7	140.20	573.68	712.44	7,845.51	10.61	13.676	11.012	41.23	21.00
30.6	120.49	503.31	694.82	7,205.95	10.62	14.317	10.371	35.44	18.00
25.5	100.67	429.54	676.53	6,486.30	10.57	15.100	9.588	29.61	15.00
20.4	80.75	352.13	657.23	5,660.59	10.42	16.075	8.613	23.75	12.00
17.85	70.83	312.30	647.07	5,200.24	10.28	16.651	8.037	20.83	10.51
24 x 22 x 40.8	153.00	600.12	722.68	8,094.23	10.50	13.488	11.200	45.00	24.00
35.7	134.25	537.26	705.73	7,530.80	10.53	14.017	10.671	39.48	21.00
30.6	115.39	471.41	688.28	6,907.29	10.53	14.652	10.036	33.94	18.00
25.5	96.42	402.36	670.15	6,206.89	10.46	15.426	9.262	28.36	15.00



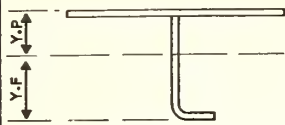
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 22 x 20.4	77.35	329.90	650.97	5,405.23	10.28	16.385	8.303	22.75	12.00
17.85	67.85	292.61	640.84	4,959.40	10.13	16.949	7.739	19.96	10.51
24 x 20 x 40.8	146.20	559.31	714.92	7,747.26	10.42	13.851	10.837	43.00	24.00
35.7	128.30	500.78	698.19	7,199.44	10.43	14.376	10.312	37.73	21.00
30.6	110.29	439.46	680.94	6,593.91	10.41	15.005	9.683	32.44	18.00
25.5	92.17	375.16	662.99	5,914.89	10.32	15.766	8.922	27.11	15.00
20.4	73.95	307.65	643.94	5,139.69	10.12	16.706	7.982	21.75	12.00
17.85	64.87	272.90	633.85	4,709.67	9.96	17.258	7.430	19.08	10.51
24 x 18 x 40.8	139.40	518.42	706.13	7,380.29	10.31	14.236	10.452	41.00	24.00
35.7	122.35	464.25	689.65	6,850.08	10.31	14.755	9.933	35.98	21.00
30.6	105.19	407.48	672.63	6,264.69	10.28	15.374	9.314	30.94	18.00
25.5	87.92	347.93	654.88	5,609.44	10.17	16.122	8.566	25.86	15.00
20.4	70.55	285.39	635.99	4,863.35	9.95	17.041	7.647	20.75	12.00
17.85	61.89	253.19	625.96	4,450.56	9.77	17.578	7.110	18.20	10.51
24 x 16 x 40.8	132.60	477.44	696.08	6,991.56	10.18	14.644	10.044	39.00	24.00
35.7	116.40	427.65	679.89	6,481.19	10.17	15.155	9.533	34.23	21.00
30.6	100.09	375.45	663.15	5,918.40	10.12	15.763	8.925	29.44	18.00
25.5	83.67	320.67	645.64	5,289.59	9.99	16.495	8.193	24.61	15.00
20.4	67.15	263.11	626.95	4,575.53	9.75	17.390	7.298	19.75	12.00
17.85	58.92	233.47	616.98	4,181.52	9.56	17.911	6.777	17.33	10.51
24 x 14 x 40.8	125.80	436.38	684.49	6,579.06	10.03	15.076	9.612	37.00	24.00
35.7	110.45	391.00	668.64	6,091.11	10.00	15.578	9.110	32.48	21.00
30.6	94.99	343.39	652.23	5,553.67	9.93	16.173	8.515	27.94	18.00
25.5	79.42	293.40	635.01	4,954.29	9.78	16.886	7.802	23.36	15.00
20.4	63.75	240.83	616.55	4,275.51	9.52	17.753	6.935	18.75	12.00
17.85	55.94	213.74	606.66	3,901.97	9.33	18.256	6.432	16.45	10.51
24 x 12 x 40.8	119.00	395.24	670.97	6,140.55	9.84	15.536	9.152	35.00	24.00
35.7	104.50	354.29	655.53	5,677.95	9.80	16.026	8.662	30.73	21.00
30.6	89.89	311.29	639.50	5,168.99	9.71	16.605	8.083	26.44	18.00
25.5	75.17	266.09	622.64	4,602.40	9.55	17.296	7.392	22.11	15.00
20.4	60.35	218.53	604.47	3,962.48	9.27	18.133	6.555	17.75	12.00
17.85	52.96	193.99	594.68	3,611.28	9.06	18.615	6.073	15.58	10.51
24 x 10 x 40.8	112.20	354.02	654.98	5,673.48	9.61	16.026	8.662	33.00	24.00
35.7	98.55	317.52	640.05	5,239.59	9.56	16.502	8.186	28.98	21.00
30.6	84.79	279.15	624.50	4,762.68	9.45	17.062	7.626	24.94	18.00
25.5	70.92	238.77	608.07	4,232.65	9.27	17.727	6.961	20.86	15.00
20.4	56.95	196.21	590.26	3,635.58	8.97	18.529	6.159	16.75	12.00
17.85	49.98	174.24	580.62	3,308.78	8.76	18.989	5.699	14.70	10.51
24 x 8 x 40.8	105.40	312.71	635.80	5,174.97	9.33	16.549	8.139	31.00	24.00
35.7	92.60	280.69	621.50	4,773.67	9.26	17.007	7.681	27.23	21.00
30.6	79.69	246.96	606.54	4,332.86	9.14	17.544	7.144	23.44	18.00
25.5	66.67	211.41	590.66	3,843.65	8.95	18.181	6.507	19.61	15.00
20.4	53.55	173.89	573.32	3,293.88	8.64	18.943	5.745	15.75	12.00
17.85	47.00	154.49	563.87	2,993.73	8.42	19.379	5.309	13.82	10.51
24 x 6 x 40.8	98.60	271.32	612.36	4,641.73	8.99	17.108	7.580	29.00	24.00
35.7	86.65	243.80	598.86	4,277.48	8.91	17.545	7.143	25.48	21.00
30.6	74.59	214.74	584.66	3,877.43	8.78	18.056	6.632	21.94	18.00
25.5	62.42	184.04	569.49	3,433.86	8.57	18.658	6.030	18.36	15.00
20.4	50.15	151.55	552.77	2,936.35	8.25	19.376	5.312	14.75	12.00
17.85	44.02	134.72	543.57	2,665.33	8.03	19.785	4.903	12.95	10.51
21 x 20 x 40.8	136.00	475.01	613.82	5,807.68	9.21	12.227	9.461	40.00	21.00
35.7	119.37	425.44	601.04	5,402.69	9.22	12.699	8.989	35.11	18.37
30.6	102.64	373.40	587.75	4,952.16	9.19	13.262	8.426	30.19	15.75
25.5	85.80	318.74	573.76	4,444.02	9.10	13.942	7.746	25.23	13.12
20.4	68.85	261.31	558.65	3,861.16	8.91	14.776	6.912	20.25	10.50
17.85	60.40	231.74	550.51	3,536.99	8.75	15.263	6.425	17.77	9.20



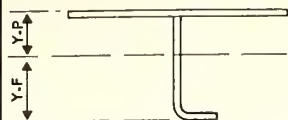
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	439.14	606.51	5,524.21	9.12	12.580	9.108	38.00	21.00
35.7	113.42	393.36	593.88	5,132.02	9.12	13.047	8.641	33.36	18.37
30.6	97.54	345.30	580.74	4,696.41	9.07	13.601	8.087	28.69	15.75
25.5	81.55	294.81	566.86	4,206.22	8.96	14.268	7.420	23.98	13.12
20.4	65.45	241.74	551.82	3,645.69	8.75	15.081	6.607	19.25	10.50
17.85	57.43	214.41	543.67	3,334.88	8.58	15.554	6.134	16.89	9.20
21 x 16 x 40.8	122.40	403.18	598.08	5,223.14	9.01	12.955	8.733	36.00	21.00
35.7	107.47	361.23	585.66	4,845.56	8.99	13.414	8.274	31.61	18.37
30.6	92.44	317.16	572.68	4,426.87	8.92	13.958	7.730	27.19	15.75
25.5	77.30	270.85	558.94	3,956.79	8.80	14.609	7.079	22.73	13.12
20.4	62.05	222.15	543.98	3,420.99	8.56	15.399	6.289	18.25	10.50
17.85	54.45	197.07	535.85	3,124.80	8.39	15.856	5.832	16.01	9.20
21 x 14 x 40.8	115.60	367.14	588.29	4,902.78	8.86	13.354	8.334	34.00	21.00
35.7	101.52	329.03	576.10	4,541.91	8.83	13.804	7.884	29.86	18.37
30.6	87.34	288.98	563.33	4,142.38	8.75	14.335	7.353	25.69	15.75
25.5	73.05	246.87	549.76	3,694.87	8.61	14.967	6.721	21.48	13.12
20.4	58.65	202.56	534.91	3,186.45	8.35	15.731	5.957	17.25	10.50
17.85	51.47	179.72	526.79	2,906.27	8.17	16.171	5.517	15.14	9.20
21 x 12 x 40.8	108.80	331.01	576.76	4,561.22	8.69	13.780	7.908	32.00	21.00
35.7	95.57	296.77	564.85	4,219.45	8.64	14.218	7.470	28.11	18.37
30.6	82.24	260.76	552.34	3,841.67	8.55	14.733	6.955	24.19	15.75
25.5	68.80	222.86	538.99	3,419.48	8.39	15.344	6.344	20.23	13.12
20.4	55.25	182.95	524.29	2,941.39	8.12	16.078	5.610	16.25	10.50
17.85	48.49	162.36	516.20	2,678.76	7.92	16.499	5.189	14.26	9.20
21 x 10 x 40.8	102.00	294.80	562.99	4,196.27	8.48	14.234	7.454	30.00	21.00
35.7	89.62	264.45	551.44	3,876.39	8.41	14.658	7.030	26.36	18.37
30.6	77.14	232.49	539.26	3,523.30	8.30	15.154	6.534	22.69	15.75
25.5	64.55	198.83	526.18	3,129.57	8.13	15.740	5.948	18.98	13.12
20.4	51.85	163.32	511.68	2,685.12	7.84	16.440	5.248	15.25	10.50
17.85	45.51	145.00	503.65	2,441.72	7.64	16.840	4.848	13.39	9.20
21 x 8 x 40.8	95.20	258.50	546.25	3,805.45	8.21	14.722	6.966	28.00	21.00
35.7	83.67	232.07	535.15	3,510.68	8.14	15.128	6.560	24.61	18.37
30.6	72.04	204.19	523.39	3,185.67	8.02	15.601	6.087	21.19	15.75
25.5	60.30	174.77	510.69	2,823.94	7.82	16.158	5.530	17.73	13.12
20.4	48.45	143.69	496.47	2,416.82	7.53	16.820	4.868	14.25	10.50
17.85	42.53	127.62	488.52	2,194.52	7.32	17.196	4.492	12.51	9.20
21 x 6 x 40.8	88.40	222.11	525.47	3,385.91	7.89	15.244	6.444	26.00	21.00
35.7	77.72	199.63	514.97	3,120.02	7.80	15.629	6.059	22.86	18.37
30.6	66.94	175.85	503.78	2,826.99	7.67	16.076	5.612	19.69	15.75
25.5	56.05	150.68	491.57	2,501.30	7.47	16.600	5.088	16.48	13.12
20.4	45.05	124.04	477.75	2,135.64	7.16	17.218	4.470	13.25	10.50
17.85	39.56	110.23	469.95	1,936.51	6.95	17.567	4.121	11.63	9.20
18 x 18 x 40.8	119.00	363.33	509.46	3,963.37	7.91	10.908	7.780	35.00	18.00
35.7	104.50	325.64	500.23	3,686.02	7.90	11.319	7.369	30.73	15.75
30.6	89.89	285.96	490.48	3,375.80	7.85	11.805	6.883	26.44	13.50
25.5	75.17	244.18	479.99	3,024.57	7.74	12.387	6.301	22.11	11.25
20.4	60.35	200.21	468.33	2,621.00	7.54	13.092	5.596	17.75	9.00
15.3	45.42	153.93	454.50	2,148.84	7.17	13.960	4.728	13.36	6.75
18 x 16 x 40.8	112.20	332.47	502.58	3,739.47	7.80	11.247	7.441	33.00	18.00
35.7	98.55	298.03	493.45	3,472.36	7.78	11.651	7.037	28.98	15.75
30.6	84.79	261.75	483.79	3,174.24	7.71	12.127	6.561	24.94	13.50
25.5	70.92	223.56	473.35	2,837.67	7.59	12.693	5.995	20.86	11.25
20.4	56.95	183.35	461.67	2,452.42	7.37	13.376	5.312	16.75	9.00
15.3	42.87	141.01	447.71	2,003.96	6.99	14.212	4.476	12.61	6.75
18 x 14 x 40.8	105.40	301.53	494.52	3,500.51	7.68	11.609	7.079	31.00	18.00
35.7	92.60	270.35	485.52	3,245.27	7.64	12.004	6.684	27.23	15.75



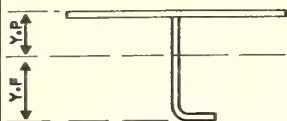
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

28.05 # PLATE WEIGHT

NOMINAL SIZE IN. x IN. x LBS./FT. ²	WEIGHT PER FOOT LBS.	SECTION MODULUS		I IN. ⁴	r IN.	YF IN.	YP IN.	BEAM DIMENSIONS	
		LESSER IN. ³	GREATER IN. ³					AREA IN. ²	SHEAR AREA IN. ²
18 x 14 x 30.6	79.69	237.51	475.96	2,961.02	7.56	12.467	6.221	23.44	13.50
25.5	66.67	202.92	465.58	2,641.04	7.42	13.015	5.673	19.61	11.25
20.4	53.55	166.47	453.90	2,276.21	7.18	13.673	5.015	15.75	9.00
15.3	40.32	128.08	439.81	1,853.69	6.79	14.473	4.215	11.86	6.75
18 x 12 x 40.8	98.60	270.49	484.92	3,244.91	7.52	11.996	6.692	29.00	18.00
35.7	86.65	242.61	476.10	3,003.44	7.47	12.380	6.308	25.48	15.75
30.6	74.59	213.23	466.67	2,735.10	7.37	12.827	5.861	21.94	13.50
25.5	62.42	182.25	456.39	2,433.91	7.21	13.355	5.333	18.36	11.25
20.4	50.15	149.58	444.72	2,091.83	6.96	13.984	4.704	14.75	9.00
15.3	37.77	115.14	430.50	1,697.72	6.56	14.744	3.944	11.11	6.75
18 x 10 x 40.8	91.80	239.36	473.33	2,970.86	7.32	12.411	6.277	27.00	18.00
35.7	80.70	214.81	464.72	2,745.38	7.26	12.780	5.908	23.73	15.75
30.6	69.49	188.90	455.48	2,495.30	7.15	13.210	5.478	20.44	13.50
25.5	58.17	161.55	445.33	2,215.39	6.98	13.713	4.975	17.11	11.25
20.4	46.75	132.68	433.71	1,898.70	6.71	14.310	4.378	13.75	9.00
15.3	35.22	102.20	419.38	1,535.70	6.29	15.026	3.662	10.36	6.75
18 x 8 x 40.8	85.00	208.15	459.02	2,676.30	7.08	12.858	5.830	25.00	18.00
35.7	74.75	186.95	450.71	2,469.41	7.00	13.209	5.479	21.98	15.75
30.6	64.39	164.53	441.73	2,240.31	6.88	13.616	5.072	18.94	13.50
25.5	53.92	140.83	431.77	1,984.54	6.70	14.092	4.596	15.86	11.25
20.4	43.35	115.77	420.25	1,696.19	6.42	14.652	4.036	12.75	9.00
15.3	32.67	89.26	405.84	1,367.30	6.00	15.319	3.369	9.61	6.75
18 x 6 x 40.8	78.20	176.84	440.94	2,358.83	6.77	13.338	5.350	23.00	18.00
35.7	68.80	159.02	433.04	2,173.57	6.69	13.669	5.019	20.23	15.75
30.6	59.29	140.12	424.42	1,968.63	6.55	14.050	4.638	17.44	13.50
25.5	49.67	120.08	414.76	1,740.26	6.36	14.492	4.196	14.61	11.25
20.4	39.95	98.84	403.43	1,483.59	6.08	15.011	3.677	11.75	9.00
15.3	30.12	76.30	389.01	1,192.11	5.66	15.623	3.065	8.86	6.75



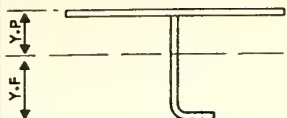
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,009.89	1,104.40	16,221.13	13.22	16.062	14.688	59.00	30.00
35.7	175.90	902.36	1,076.76	15,096.28	13.29	16.730	14.020	51.73	26.25
30.6	151.09	790.29	1,048.49	13,856.94	13.31	17.534	13.216	44.44	22.50
25.5	126.17	673.36	1,019.40	12,469.27	13.27	18.518	12.232	37.11	18.75
20.4	101.15	551.18	989.03	10,883.46	13.09	19.746	11.004	29.75	15.00
17.85	88.70	488.50	973.23	10,001.28	12.93	20.474	10.276	26.09	13.14
30 x 27 x 40.8	190.40	932.91	1,091.94	15,470.04	13.13	16.583	14.167	56.00	30.00
35.7	166.97	833.66	1,064.67	14,377.26	13.17	17.246	13.504	49.11	26.25
30.6	143.44	730.21	1,036.76	13,174.74	13.17	18.042	12.708	42.19	22.50
25.5	119.80	622.26	1,007.98	11,830.87	13.10	19.013	11.737	35.23	18.75
20.4	96.05	509.44	977.88	10,299.51	12.89	20.217	10.533	28.25	15.00
17.85	84.23	451.54	962.17	9,450.09	12.71	20.928	9.822	24.77	13.14
30 x 24 x 40.8	180.20	855.78	1,077.56	14,667.01	13.00	17.139	13.611	53.00	30.00
35.7	158.05	764.85	1,050.73	13,611.20	13.02	17.796	12.954	46.48	26.25
30.6	135.79	670.06	1,023.23	12,450.89	13.00	18.582	12.168	39.94	22.50
25.5	113.42	571.11	994.84	11,156.79	12.89	19.535	11.215	33.36	18.75
20.4	90.95	467.67	965.05	9,686.60	12.65	20.713	10.037	26.75	15.00
17.85	79.76	414.58	949.45	8,873.58	12.45	21.404	9.346	23.46	13.14
30 x 21 x 40.8	170.00	778.50	1,060.79	13,806.48	12.84	17.735	13.015	50.00	30.00
35.7	149.12	695.93	1,034.47	12,793.34	12.84	18.383	12.367	43.86	26.25
30.6	128.14	609.83	1,007.48	11,681.44	12.79	19.155	11.595	37.69	22.50
25.5	107.05	519.92	979.53	10,443.98	12.65	20.088	10.662	31.48	18.75
20.4	85.85	425.88	950.12	9,042.52	12.38	21.233	9.517	25.25	15.00
17.85	75.30	377.59	934.67	8,269.97	12.16	21.902	8.848	22.15	13.14
30 x 18 x 40.8	159.80	701.06	1,040.97	12,882.01	12.63	18.375	12.375	47.00	30.00
35.7	140.20	626.90	1,015.29	11,918.22	12.61	19.011	11.739	41.23	26.25
30.6	120.49	549.53	988.89	10,861.96	12.53	19.766	10.984	35.44	22.50
25.5	100.67	468.68	961.50	9,688.97	12.37	20.673	10.077	29.61	18.75
20.4	80.75	384.06	932.55	8,364.85	12.06	21.780	8.970	23.75	15.00
17.85	70.83	340.59	917.28	7,637.29	11.83	22.424	8.326	20.83	13.14
30 x 15 x 40.8	149.60	623.47	1,017.20	11,886.23	12.36	19.065	11.685	44.00	30.00
35.7	131.27	557.76	992.29	10,979.61	12.32	19.685	11.065	38.61	26.25
30.6	112.84	489.15	966.63	9,987.39	12.21	20.418	10.332	33.19	22.50
25.5	94.30	417.39	939.92	8,887.92	12.02	21.294	9.456	27.73	18.75
20.4	75.65	342.22	911.56	7,650.87	11.69	22.357	8.393	22.25	15.00
17.85	66.36	303.56	896.53	6,973.40	11.44	22.972	7.778	19.52	13.14
30 x 12 x 40.8	139.40	545.72	988.15	10,810.54	12.03	19.810	10.940	41.00	30.00
35.7	122.35	488.51	964.21	9,970.36	11.96	20.410	10.340	35.98	26.25
30.6	105.19	428.70	939.49	9,051.99	11.83	21.115	9.635	30.94	22.50
25.5	87.92	366.06	913.64	8,036.49	11.61	21.954	8.796	25.86	18.75
20.4	70.55	300.35	886.05	6,897.59	11.25	22.965	7.785	20.75	15.00
17.85	61.89	266.53	871.32	6,275.94	10.99	23.547	7.203	18.20	13.14
30 x 9 x 40.8	129.20	467.81	951.85	9,644.92	11.59	20.617	10.133	38.00	30.00
35.7	113.42	419.15	929.17	8,882.17	11.50	21.191	9.559	33.36	26.25
30.6	97.54	368.18	905.66	8,049.18	11.35	21.862	8.888	28.69	22.50
25.5	81.55	314.69	880.95	7,129.75	11.11	22.657	8.093	23.98	18.75
20.4	65.45	258.46	854.36	6,101.68	10.73	23.608	7.142	19.25	15.00
17.85	57.43	229.47	840.06	5,542.27	10.46	24.153	6.597	16.89	13.14
30 x 6 x 40.8	119.00	389.75	905.20	8,377.59	11.04	21.495	9.255	35.00	30.00
35.7	104.50	349.68	884.21	7,705.39	10.93	22.036	8.714	30.73	26.25
30.6	89.89	307.58	862.33	6,971.40	10.76	22.666	8.084	26.44	22.50
25.5	75.17	263.26	839.16	6,162.14	10.50	23.407	7.343	22.11	18.75
20.4	60.35	216.54	813.96	5,259.40	10.11	24.289	6.461	17.75	15.00
17.85	52.96	192.40	800.27	4,769.52	9.83	24.790	5.960	15.58	13.14
27 x 27 x 40.8	180.20	822.23	967.78	12,336.12	11.92	15.003	12.747	53.00	27.00
35.7	158.05	734.81	945.66	11,474.75	11.96	15.616	12.134	46.48	23.62



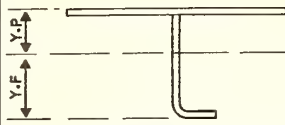
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	643.59	922.91	10,522.08	11.95	16.349	11.401	39.94	20.25
25.5	113.42	548.32	899.29	9,452.46	11.87	17.239	10.511	33.36	16.87
20.4	90.95	448.71	874.34	8,228.75	11.66	18.339	9.411	26.75	13.50
17.85	79.76	397.61	861.17	7,548.44	11.49	18.985	8.765	23.46	11.83
27 x 24 x 40.8	170.00	752.59	955.43	11,682.23	11.81	15.523	12.227	50.00	27.00
35.7	149.12	672.65	933.62	10,849.37	11.82	16.129	11.621	43.86	23.62
30.6	128.14	589.23	911.16	9,929.77	11.79	16.852	10.898	37.69	20.25
25.5	107.05	502.09	887.80	8,899.76	11.68	17.726	10.024	31.48	16.87
20.4	85.85	410.96	863.03	7,725.45	11.44	18.798	8.952	25.25	13.50
17.85	75.30	364.20	849.91	7,074.82	11.25	19.426	8.324	22.15	11.83
27 x 21 x 40.8	159.80	682.78	940.93	10,979.78	11.66	16.081	11.669	47.00	27.00
35.7	140.20	610.38	919.50	10,180.22	11.65	16.679	11.071	41.23	23.62
30.6	120.49	534.79	897.40	9,298.93	11.59	17.388	10.362	35.44	20.25
25.5	100.67	455.81	874.35	8,314.34	11.46	18.241	9.509	29.61	16.87
20.4	80.75	373.19	849.81	7,195.89	11.19	19.282	8.468	23.75	13.50
17.85	70.83	330.77	836.75	6,578.39	10.98	19.888	7.862	20.83	11.83
27 x 18 x 40.8	149.60	612.82	923.67	10,223.14	11.47	16.682	11.068	44.00	27.00
35.7	131.27	547.99	902.72	9,462.53	11.44	17.268	10.482	38.61	23.62
30.6	112.84	480.28	881.06	8,625.69	11.35	17.960	9.790	33.19	20.25
25.5	94.30	409.48	858.39	7,693.23	11.19	18.788	8.962	27.73	16.87
20.4	75.65	335.38	834.14	6,637.96	10.89	19.792	7.958	22.25	13.50
17.85	66.36	297.32	821.17	6,057.47	10.66	20.373	7.377	19.52	11.83
27 x 15 x 40.8	139.40	542.70	902.80	9,405.78	11.22	17.332	10.418	41.00	27.00
35.7	122.35	485.49	882.43	8,690.83	11.16	17.901	9.849	35.98	23.62
30.6	105.19	425.69	861.32	7,905.63	11.05	18.571	9.179	30.94	20.25
25.5	87.92	363.11	839.14	7,033.05	10.86	19.369	8.381	25.86	16.87
20.4	70.55	297.56	815.27	6,049.32	10.54	20.330	7.420	20.75	13.50
17.85	61.89	263.86	802.43	5,510.21	10.30	20.883	6.867	18.20	11.83
27 x 12 x 40.8	129.20	472.41	877.03	8,520.09	10.90	18.035	9.715	38.00	27.00
35.7	113.42	422.87	857.42	7,858.76	10.82	18.584	9.166	33.36	23.62
30.6	97.54	371.02	837.01	7,133.68	10.69	19.227	8.523	28.69	20.25
25.5	81.55	316.70	815.47	6,329.99	10.47	19.988	7.762	23.98	16.87
20.4	65.45	259.70	792.12	5,427.36	10.12	20.898	6.852	19.25	13.50
17.85	57.43	230.38	779.46	4,934.54	9.87	21.419	6.331	16.89	11.83
27 x 9 x 40.8	119.00	401.97	844.42	7,557.13	10.48	18.800	8.950	35.00	27.00
35.7	104.50	360.14	825.80	6,958.97	10.39	19.323	8.427	30.73	23.62
30.6	89.89	316.28	806.34	6,304.01	10.23	19.932	7.818	26.44	20.25
25.5	75.17	270.23	785.66	5,579.73	9.99	20.648	7.102	22.11	16.87
20.4	60.35	221.83	763.03	4,769.17	9.62	21.500	6.250	17.75	13.50
17.85	52.96	196.88	750.65	4,328.21	9.37	21.984	5.766	15.58	11.83
27 x 6 x 40.8	108.80	331.36	801.81	6,506.32	9.95	19.635	8.115	32.00	27.00
35.7	95.57	297.29	784.58	5,982.82	9.83	20.125	7.625	28.11	23.62
30.6	82.24	261.46	766.43	5,409.92	9.66	20.691	7.059	24.19	20.25
25.5	68.80	223.72	746.97	4,777.37	9.41	21.354	6.396	20.23	16.87
20.4	55.25	183.92	725.39	4,071.50	9.02	22.137	5.613	16.25	13.50
17.85	48.49	163.36	713.44	3,688.69	8.77	22.580	5.170	14.26	11.83
24 x 24 x 40.8	159.80	652.74	835.98	9,071.91	10.60	13.898	10.852	47.00	24.00
35.7	140.20	583.50	818.73	8,432.17	10.60	14.451	10.299	41.23	21.00
30.6	120.49	511.14	800.84	7,722.08	10.56	15.107	9.643	35.44	18.00
25.5	100.67	435.48	782.04	6,923.01	10.45	15.897	8.853	29.61	15.00
20.4	80.75	356.32	761.80	6,008.51	10.22	16.863	7.887	23.75	12.00
17.85	70.83	315.69	750.92	5,500.79	10.04	17.425	7.325	20.83	10.51
24 x 22 x 40.8	153.00	611.27	828.01	8,703.60	10.51	14.238	10.512	45.00	24.00
35.7	134.25	546.48	810.92	8,080.18	10.50	14.786	9.964	39.48	21.00
30.6	115.39	478.76	793.17	7,389.23	10.45	15.434	9.316	33.94	18.00
25.5	96.42	407.95	774.49	6,613.25	10.32	16.211	8.539	28.36	15.00

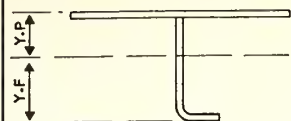


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 22 x 20.4	77.35	333.84	754.31	5,727.62	10.07	17.157	7.593	22.75	12.00
17.85	67.85	295.80	743.42	5,237.22	9.88	17.705	7.045	19.96	10.51
24 x 20 x 40.8	146.20	569.73	819.04	8,316.10	10.41	14.596	10.154	43.00	24.00
35.7	128.30	509.41	802.14	7,710.98	10.39	15.137	9.613	37.73	21.00
30.6	110.29	446.35	784.57	7,041.29	10.31	15.775	8.975	32.44	18.00
25.5	92.17	380.39	766.01	6,290.76	10.17	16.538	8.212	27.11	15.00
20.4	73.95	311.35	745.91	5,436.61	9.90	17.461	7.289	21.75	12.00
17.85	64.87	275.90	735.02	4,964.92	9.69	17.995	6.755	19.08	10.51
24 x 18 x 40.8	139.40	528.12	808.88	7,907.88	10.29	14.974	9.776	41.00	24.00
35.7	122.35	472.29	792.21	7,323.24	10.25	15.506	9.244	35.98	21.00
30.6	105.19	413.90	774.83	6,677.22	10.16	16.132	8.618	30.94	18.00
25.5	87.92	352.81	756.44	5,954.75	9.99	16.878	7.872	25.86	15.00
20.4	70.55	288.85	736.43	5,134.92	9.71	17.777	6.973	20.75	12.00
17.85	61.89	256.00	725.54	4,683.43	9.49	18.295	6.455	18.20	10.51
24 x 16 x 40.8	132.60	486.43	797.28	7,477.22	10.14	15.372	9.378	39.00	24.00
35.7	116.40	435.11	780.87	6,915.55	10.09	15.894	8.856	34.23	21.00
30.6	100.09	381.42	763.73	6,295.87	9.98	16.506	8.244	29.44	18.00
25.5	83.67	325.22	745.53	5,604.35	9.80	17.233	7.517	24.61	15.00
20.4	67.15	266.34	725.64	4,821.96	9.49	18.105	6.645	19.75	12.00
17.85	58.92	236.08	714.76	4,392.28	9.27	18.605	6.145	17.33	10.51
24 x 14 x 40.8	125.80	444.67	783.90	7,022.22	9.96	15.792	8.958	37.00	24.00
35.7	110.45	397.88	767.81	6,486.32	9.90	16.302	8.448	32.48	21.00
30.6	94.99	348.90	750.95	5,895.98	9.78	16.899	7.851	27.94	18.00
25.5	79.42	297.60	732.98	5,238.61	9.58	17.603	7.147	23.36	15.00
20.4	63.75	243.81	713.25	4,497.07	9.26	18.445	6.305	18.75	12.00
17.85	55.94	216.16	702.40	4,090.98	9.03	18.926	5.824	16.45	10.51
24 x 12 x 40.8	119.00	402.84	768.31	6,540.76	9.75	16.237	8.513	35.00	24.00
35.7	104.50	360.60	752.60	6,033.80	9.67	16.733	8.017	30.73	21.00
30.6	89.89	316.35	736.09	5,476.15	9.54	17.310	7.440	26.44	18.00
25.5	75.17	269.96	718.41	4,856.50	9.32	17.990	6.760	22.11	15.00
20.4	60.35	221.27	698.88	4,159.56	8.99	18.798	5.952	17.75	12.00
17.85	52.96	196.23	688.08	3,778.97	8.75	19.258	5.492	15.58	10.51
24 x 10 x 40.8	112.20	360.93	749.90	6,030.46	9.50	16.708	8.042	33.00	24.00
35.7	98.55	323.27	734.66	5,556.05	9.41	17.187	7.563	28.98	21.00
30.6	84.79	283.76	718.58	5,034.87	9.26	17.743	7.007	24.94	18.00
25.5	70.92	242.29	701.28	4,456.90	9.03	18.395	6.355	20.86	15.00
20.4	56.95	198.73	682.02	3,808.69	8.68	19.166	5.584	16.75	12.00
17.85	49.98	176.29	671.29	3,455.68	8.45	19.602	5.148	14.70	10.51
24 x 8 x 40.8	105.40	318.94	727.84	5,488.65	9.21	17.209	7.541	31.00	24.00
35.7	92.60	285.88	713.19	5,050.87	9.10	17.668	7.082	27.23	21.00
30.6	79.69	251.14	697.66	4,570.45	8.94	18.199	6.551	23.44	18.00
25.5	66.67	214.61	680.84	4,038.58	8.70	18.818	5.932	19.61	15.00
20.4	53.55	176.17	661.94	3,443.65	8.34	19.548	5.202	15.75	12.00
17.85	47.00	156.34	651.33	3,120.49	8.10	19.959	4.791	13.82	10.51
24 x 6 x 40.8	98.60	276.88	700.91	4,912.30	8.85	17.742	7.008	29.00	24.00
35.7	86.65	248.44	687.03	4,515.86	8.73	18.177	6.573	25.48	21.00
30.6	74.59	218.48	672.21	4,081.00	8.56	18.679	6.071	21.94	18.00
25.5	62.42	186.91	656.03	3,600.20	8.31	19.262	5.488	18.36	15.00
20.4	50.15	153.60	637.65	3,063.55	7.95	19.946	4.804	14.75	12.00
17.85	44.02	136.39	627.22	2,772.72	7.71	20.329	4.421	12.95	10.51
21 x 20 x 40.8	136.00	483.51	705.06	6,238.33	9.20	12.902	8.848	40.00	21.00
35.7	119.37	432.44	692.08	5,788.62	9.17	13.386	8.364	35.11	18.37
30.6	102.64	378.95	678.42	5,288.31	9.09	13.955	7.795	30.19	15.75
25.5	85.80	322.94	663.78	4,725.09	8.95	14.632	7.118	25.23	13.12
20.4	68.85	264.26	647.56	4,081.92	8.69	15.446	6.304	20.25	10.50
17.85	60.40	234.13	638.57	3,726.15	8.50	15.915	5.835	17.77	9.20



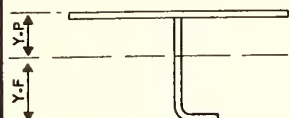
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	447.01	696.52	5,921.96	9.08	13.248	8.502	38.00	21.00
35.7	113.42	399.85	683.68	5,487.45	9.04	13.724	8.026	33.36	18.37
30.6	97.54	350.46	670.12	5,004.97	8.95	14.281	7.469	28.69	15.75
25.5	81.55	298.71	655.54	4,463.20	8.79	14.942	6.808	23.98	13.12
20.4	65.45	244.49	639.31	3,846.60	8.52	15.733	6.017	19.25	10.50
17.85	57.43	216.64	630.27	3,506.59	8.32	16.186	5.564	16.89	9.20
21 x 16 x 40.8	122.40	410.44	686.70	5,587.46	8.95	13.613	8.137	36.00	21.00
35.7	107.47	367.22	674.02	5,170.15	8.89	14.079	7.671	31.61	18.37
30.6	92.44	321.92	660.59	4,707.69	8.79	14.624	7.126	27.19	15.75
25.5	77.30	274.46	646.10	4,189.73	8.61	15.265	6.485	22.73	13.12
20.4	62.05	224.71	629.87	3,602.24	8.32	16.031	5.719	18.25	10.50
17.85	54.45	199.14	620.78	3,279.31	8.12	16.467	5.283	16.01	9.20
21 x 14 x 40.8	115.60	373.79	675.29	5,233.22	8.79	14.000	7.750	34.00	21.00
35.7	101.52	334.52	662.81	4,835.40	8.72	14.455	7.295	29.86	18.37
30.6	87.34	293.36	649.55	4,395.40	8.60	14.983	6.767	25.69	15.75
25.5	73.05	250.19	635.16	3,903.88	8.41	15.604	6.146	21.48	13.12
20.4	58.65	204.91	618.95	3,348.30	8.10	16.340	5.410	17.25	10.50
17.85	51.47	181.63	609.82	3,043.87	7.89	16.759	4.991	15.14	9.20
21 x 12 x 40.8	108.80	337.06	661.88	4,857.44	8.60	14.411	7.339	32.00	21.00
35.7	95.57	301.78	649.64	4,481.72	8.51	14.851	6.899	28.11	18.37
30.6	82.24	264.75	636.59	4,066.94	8.38	15.361	6.389	24.19	15.75
25.5	68.80	225.90	622.35	3,604.79	8.17	15.958	5.792	20.23	13.12
20.4	55.25	185.10	606.19	3,084.20	7.85	16.662	5.088	16.25	10.50
17.85	48.49	164.11	597.03	2,799.85	7.64	17.060	4.690	14.26	9.20
21 x 10 x 40.8	102.00	300.26	645.87	4,458.10	8.36	14.848	6.902	30.00	21.00
35.7	89.62	268.97	633.95	4,107.46	8.27	15.271	6.479	26.36	18.37
30.6	77.14	236.11	621.17	3,721.03	8.12	15.760	5.990	22.69	15.75
25.5	64.55	201.58	607.14	3,291.53	7.90	16.329	5.421	18.98	13.12
20.4	51.85	165.28	591.08	2,809.33	7.57	16.997	4.753	15.25	10.50
17.85	45.51	146.59	581.90	2,546.76	7.35	17.373	4.377	13.39	9.20
21 x 8 x 40.8	95.20	263.38	626.44	4,032.89	8.08	15.312	6.438	28.00	21.00
35.7	83.67	236.12	614.94	3,710.75	7.97	15.716	6.034	24.61	18.37
30.6	72.04	207.43	602.53	3,356.24	7.82	16.180	5.570	21.19	15.75
25.5	60.30	177.24	588.78	2,963.06	7.59	16.717	5.033	17.73	13.12
20.4	48.45	145.45	572.89	2,522.99	7.25	17.346	4.404	14.25	10.50
17.85	42.53	129.06	563.72	2,284.08	7.03	17.698	4.052	12.51	9.20
21 x 6 x 40.8	88.40	226.42	602.37	3,579.23	7.74	15.808	5.942	26.00	21.00
35.7	77.72	203.21	591.42	3,289.52	7.62	16.188	5.562	22.86	18.37
30.6	66.94	178.72	579.51	2,970.97	7.46	16.623	5.127	19.69	15.75
25.5	56.05	152.88	566.19	2,618.24	7.22	17.126	4.624	16.48	13.12
20.4	45.05	125.61	550.58	2,224.48	6.88	17.710	4.040	13.25	10.50
17.85	39.56	111.52	541.47	2,011.26	6.66	18.036	3.714	11.63	9.20
18 x 18 x 40.8	119.00	369.58	586.52	4,250.96	7.86	11.502	7.248	35.00	18.00
35.7	104.50	330.76	577.03	3,942.07	7.82	11.918	6.832	30.73	15.75
30.6	89.89	290.00	566.83	3,597.15	7.73	12.404	6.346	26.44	13.50
25.5	75.17	247.23	555.59	3,208.00	7.58	12.976	5.774	22.11	11.25
20.4	60.35	202.35	542.67	2,763.59	7.33	13.657	5.093	17.75	9.00
15.3	45.42	155.29	526.62	2,248.58	6.91	14.480	4.270	13.36	6.75
18 x 16 x 40.8	112.20	338.19	578.40	4,001.44	7.74	11.832	6.918	33.00	18.00
35.7	98.55	302.72	568.98	3,704.86	7.68	12.239	6.511	28.98	15.75
30.6	84.79	265.47	558.82	3,374.49	7.58	12.711	6.039	24.94	13.50
25.5	70.92	226.36	547.56	3,002.92	7.42	13.266	5.484	20.86	11.25
20.4	56.95	185.32	534.54	2,580.24	7.15	13.932	4.827	16.75	9.00
15.3	42.87	142.26	518.22	2,092.88	6.72	14.711	4.039	12.61	6.75
18 x 14 x 40.8	105.40	306.73	568.89	3,736.52	7.60	12.182	6.568	31.00	18.00
35.7	92.60	274.63	559.56	3,454.04	7.53	12.577	6.173	27.23	15.75
30.6	79.69	240.90	549.45	3,140.15	7.41	13.035	5.715	23.44	13.50



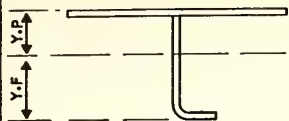
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 25.5	66.67	205.48	538.19	2,788.23	7.23	13.569	5.181	19.61	11.25
20.4	53.55	168.28	525.07	2,389.50	6.95	14.199	4.551	15.75	9.00
15.3	40.32	129.23	508.47	1,932.07	6.51	14.950	3.800	11.86	6.75
18 x 12 x 40.8	98.60	275.18	557.60	3,454.72	7.42	12.554	6.196	29.00	18.00
35.7	86.65	246.48	548.39	3,188.41	7.34	12.936	5.814	25.48	15.75
30.6	74.59	216.30	538.36	2,893.19	7.21	13.376	5.374	21.94	13.50
25.5	62.42	184.57	527.12	2,563.24	7.01	13.887	4.863	18.36	11.25
20.4	50.15	151.23	513.91	2,190.88	6.72	14.487	4.263	14.75	9.00
15.3	37.77	116.20	497.02	1,765.87	6.27	15.197	3.553	11.11	6.75
18 x 10 x 40.8	91.80	243.56	543.96	3,154.37	7.21	12.951	5.799	27.00	18.00
35.7	80.70	218.27	534.93	2,906.61	7.11	13.316	5.434	23.73	15.75
30.6	69.49	191.66	525.03	2,632.57	6.97	13.736	5.014	20.44	13.50
25.5	58.17	163.65	513.83	2,327.19	6.76	14.221	4.529	17.11	11.25
20.4	46.75	134.17	500.55	1,983.91	6.46	14.787	3.963	13.75	9.00
15.3	35.22	103.16	483.37	1,594.02	6.01	15.452	3.298	10.36	6.75
18 x 8 x 40.8	85.00	211.86	527.18	2,833.59	6.94	13.375	5.375	25.00	18.00
35.7	74.75	190.01	518.39	2,607.12	6.84	13.721	5.029	21.98	15.75
30.6	64.39	166.98	508.68	2,357.11	6.69	14.116	4.634	18.94	13.50
25.5	53.92	142.69	497.59	2,079.25	6.47	14.571	4.179	15.86	11.25
20.4	43.35	117.10	484.28	1,768.04	6.17	15.099	3.651	12.75	9.00
15.3	32.67	90.11	466.83	1,416.23	5.72	15.716	3.034	9.61	6.75
18 x 6 x 40.8	78.20	180.07	506.01	2,490.21	6.62	13.829	4.921	23.00	18.00
35.7	68.80	161.70	497.59	2,288.22	6.51	14.151	4.599	20.23	15.75
30.6	59.29	142.26	488.17	2,065.50	6.35	14.519	4.231	17.44	13.50
25.5	49.67	121.72	477.29	1,818.50	6.13	14.940	3.810	14.61	11.25
20.4	39.95	100.01	464.03	1,542.67	5.82	15.425	3.325	11.75	9.00
15.3	30.12	77.06	446.38	1,232.18	5.38	15.990	2.760	8.86	6.75



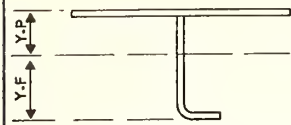
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,042.25	1,409.94	18,502.31	13.28	17.752	13.123	59.00	30.00
35.7	175.90	929.07	1,381.85	17,152.71	13.25	18.462	12.413	51.73	26.25
30.6	151.09	811.55	1,352.74	15,661.10	13.16	19.298	11.577	44.44	22.50
25.5	126.17	689.45	1,322.15	13,991.02	12.98	20.293	10.582	37.11	18.75
20.4	101.15	562.51	1,289.16	12,091.51	12.64	21.496	9.379	29.75	15.00
17.85	88.70	497.66	1,271.35	11,042.76	12.38	22.189	8.686	26.09	13.14
30 x 27 x 40.8	190.40	962.92	1,393.80	17,582.86	13.13	18.260	12.615	56.00	30.00
35.7	166.97	858.45	1,366.02	16,276.16	13.09	18.960	11.915	49.11	26.25
30.6	143.44	749.96	1,337.17	14,834.77	12.97	19.781	11.094	42.19	22.50
25.5	119.80	637.22	1,306.76	13,225.13	12.76	20.754	10.121	35.23	18.75
20.4	96.05	519.98	1,273.85	11,400.72	12.40	21.925	8.950	28.25	15.00
17.85	84.23	460.08	1,256.01	10,396.70	12.13	22.597	8.278	24.77	13.14
30 x 24 x 40.8	180.20	883.46	1,375.21	16,607.66	12.96	18.799	12.076	53.00	30.00
35.7	158.05	787.73	1,347.78	15,349.82	12.89	19.486	11.389	46.48	26.25
30.6	135.79	688.30	1,319.24	13,965.15	12.75	20.289	10.586	39.94	22.50
25.5	113.42	584.95	1,289.07	12,423.03	12.52	21.238	9.637	33.36	18.75
20.4	90.95	477.44	1,256.26	10,681.43	12.12	22.372	8.503	26.75	15.00
17.85	79.76	422.49	1,238.39	9,726.17	11.84	23.021	7.854	23.46	13.14
30 x 21 x 40.8	170.00	803.87	1,353.54	15,571.50	12.74	19.371	11.504	50.00	30.00
35.7	149.12	716.93	1,326.55	14,369.34	12.65	20.043	10.832	43.86	26.25
30.6	128.14	626.59	1,298.39	13,048.74	12.49	20.825	10.050	37.69	22.50
25.5	107.05	532.64	1,268.51	11,582.09	12.23	21.745	9.130	31.48	18.75
20.4	85.85	434.87	1,235.85	9,931.83	11.81	22.839	8.036	25.25	15.00
17.85	75.30	384.88	1,217.96	9,029.77	11.52	23.461	7.414	22.15	13.14
30 x 18 x 40.8	159.80	724.15	1,327.97	14,468.45	12.48	19.980	10.895	47.00	30.00
35.7	140.20	646.04	1,301.51	13,329.82	12.37	20.633	10.242	41.23	26.25
30.6	120.49	564.81	1,273.83	12,081.66	12.18	21.390	9.485	35.44	22.50
25.5	100.67	480.30	1,244.33	10,699.40	11.90	22.276	8.599	29.61	18.75
20.4	80.75	392.29	1,211.88	9,149.96	11.46	23.325	7.550	23.75	15.00
17.85	70.83	347.26	1,194.00	8,305.96	11.15	23.919	6.956	20.83	13.14
30 x 15 x 40.8	149.60	644.31	1,297.34	13,291.84	12.16	20.630	10.245	44.00	30.00
35.7	131.27	575.05	1,271.56	12,225.76	12.02	21.260	9.615	38.61	26.25
30.6	112.84	502.98	1,244.47	11,059.58	11.82	21.988	8.887	33.19	22.50
25.5	94.30	427.92	1,215.46	9,771.79	11.52	22.835	8.040	27.73	18.75
20.4	75.65	349.68	1,183.32	8,333.69	11.05	23.832	7.043	22.25	15.00
17.85	66.36	309.63	1,165.48	7,553.09	10.74	24.394	6.481	19.52	13.14
30 x 12 x 40.8	139.40	564.34	1,260.00	12,034.05	11.77	21.324	9.551	41.00	30.00
35.7	122.35	503.98	1,235.08	11,050.96	11.61	21.927	8.948	35.98	26.25
30.6	105.19	441.09	1,208.77	9,977.69	11.39	22.621	8.254	30.94	22.50
25.5	87.92	375.51	1,180.42	8,795.74	11.07	23.424	7.451	25.86	18.75
20.4	70.55	307.06	1,148.71	7,480.71	10.59	24.363	6.512	20.75	15.00
17.85	61.89	271.98	1,130.97	6,769.38	10.27	24.890	5.985	18.20	13.14
30 x 9 x 40.8	129.20	484.24	1,213.45	10,686.36	11.28	22.068	8.807	38.00	30.00
35.7	113.42	432.81	1,189.67	9,798.39	11.12	22.639	8.236	33.36	26.25
30.6	97.54	379.14	1,164.41	8,830.56	10.88	23.291	7.584	28.69	22.50
25.5	81.55	323.06	1,136.96	7,767.34	10.54	24.043	6.832	23.98	18.75
20.4	65.45	264.41	1,105.93	6,588.47	10.05	24.918	5.957	19.25	15.00
17.85	57.43	234.31	1,088.37	5,952.88	9.73	25.405	5.470	16.89	13.14
30 x 6 x 40.8	119.00	404.01	1,153.82	9,238.79	10.68	22.868	8.007	35.00	30.00
35.7	104.50	361.56	1,131.61	8,460.07	10.50	23.399	7.476	30.73	26.25
30.6	89.89	317.12	1,107.81	7,612.12	10.26	24.004	6.871	26.44	22.50
25.5	75.17	270.57	1,081.66	6,682.27	9.91	24.697	6.178	22.11	18.75
20.4	60.35	221.75	1,051.66	5,654.21	9.42	25.499	5.376	17.75	15.00
17.85	52.96	196.64	1,034.47	5,101.51	9.11	25.943	4.932	15.58	13.14
27 x 27 x 40.8	180.20	847.75	1,240.08	14,035.78	11.91	16.557	11.318	53.00	27.00
35.7	158.05	755.80	1,217.38	12,998.09	11.86	17.198	10.677	46.48	23.62
30.6	135.79	660.23	1,193.60	11,849.46	11.75	17.948	9.927	39.94	20.25



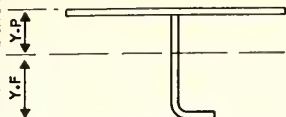
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	560.87	1,168.26	10,563.00	11.54	18.833	9.042	33.36	16.87
20.4	90.95	457.53	1,140.36	9,101.83	11.19	19.893	7.982	26.75	13.50
17.85	79.76	404.74	1,124.98	8,296.99	10.93	20.500	7.375	23.46	11.83
27 x 24 x 40.8	170.00	776.02	1,223.88	13,237.91	11.75	17.059	10.816	50.00	27.00
35.7	149.12	691.95	1,201.41	12,238.98	11.67	17.688	10.187	43.86	23.62
30.6	128.14	604.54	1,177.82	11,135.87	11.54	18.420	9.455	37.69	20.25
25.5	107.05	513.65	1,152.57	9,904.20	11.31	19.282	8.593	31.48	16.87
20.4	85.85	419.10	1,124.63	8,510.80	10.93	20.307	7.568	25.25	13.50
17.85	75.30	370.78	1,109.15	7,746.07	10.67	20.891	6.984	22.15	11.83
27 x 21 x 40.8	159.80	704.17	1,204.89	12,388.55	11.55	17.593	10.282	47.00	27.00
35.7	140.20	628.00	1,182.71	11,434.17	11.45	18.207	9.668	41.23	23.62
30.6	120.49	548.80	1,159.35	10,382.83	11.30	18.919	8.956	35.44	20.25
25.5	100.67	466.40	1,134.24	9,212.70	11.04	19.753	8.122	29.61	16.87
20.4	80.75	380.65	1,106.28	7,894.34	10.64	20.739	7.136	23.75	13.50
17.85	70.83	336.81	1,090.69	7,173.48	10.36	21.298	6.577	20.83	11.83
27 x 18 x 40.8	149.60	632.18	1,182.34	11,482.54	11.30	18.163	9.712	44.00	27.00
35.7	131.27	563.97	1,160.52	10,579.39	11.19	18.759	9.116	38.61	23.62
30.6	112.84	492.99	1,137.46	9,586.97	11.01	19.447	8.428	33.19	20.25
25.5	94.30	419.12	1,112.54	8,486.00	10.73	20.247	7.628	27.73	16.87
20.4	75.65	342.18	1,084.60	7,250.75	10.31	21.190	6.685	22.25	13.50
17.85	66.36	302.83	1,068.90	6,577.90	10.02	21.721	6.154	19.52	11.83
27 x 15 x 40.8	139.40	560.07	1,155.10	10,514.02	11.00	18.773	9.102	41.00	27.00
35.7	122.35	499.84	1,133.76	9,669.84	10.86	19.346	8.529	35.98	23.62
30.6	105.19	437.12	1,111.09	8,744.54	10.67	20.005	7.870	30.94	20.25
25.5	87.92	371.79	1,086.44	7,721.36	10.37	20.768	7.107	25.86	16.87
20.4	70.55	303.69	1,058.57	6,578.21	9.93	21.661	6.214	20.75	13.50
17.85	61.89	268.84	1,042.80	5,957.91	9.64	22.162	5.713	18.20	11.83
27 x 12 x 40.8	129.20	487.82	1,121.56	9,476.29	10.63	19.426	8.449	38.00	27.00
35.7	113.42	435.62	1,100.84	8,700.09	10.47	19.972	7.903	33.36	23.62
30.6	97.54	381.19	1,078.71	7,851.31	10.26	20.597	7.278	28.69	20.25
25.5	81.55	324.43	1,054.47	6,915.71	9.94	21.317	6.558	23.98	16.87
20.4	65.45	265.18	1,026.77	5,874.73	9.49	22.153	5.722	19.25	13.50
17.85	57.43	234.83	1,010.94	5,312.00	9.19	22.620	5.255	16.89	11.83
27 x 9 x 40.8	119.00	415.44	1,079.24	8,361.65	10.16	20.127	7.748	35.00	27.00
35.7	104.50	371.30	1,059.39	7,663.94	10.00	20.641	7.234	30.73	23.62
30.6	89.89	325.21	1,038.01	6,902.55	9.77	21.225	6.650	26.44	20.25
25.5	75.17	277.03	1,014.37	6,065.66	9.44	21.895	5.980	22.11	16.87
20.4	60.35	226.65	987.01	5,138.11	8.98	22.669	5.206	17.75	13.50
17.85	52.96	200.81	971.21	4,638.49	8.68	23.099	4.776	15.58	11.83
27 x 6 x 40.8	108.80	342.92	1,024.17	7,161.22	9.59	20.883	6.992	32.00	27.00
35.7	95.57	306.90	1,005.56	6,554.35	9.41	21.357	6.518	28.11	23.62
30.6	82.24	269.15	985.30	5,892.92	9.17	21.894	5.981	24.19	20.25
25.5	68.80	229.60	962.60	5,167.45	8.84	22.507	5.368	20.23	16.87
20.4	55.25	188.11	935.90	4,365.95	8.38	23.210	4.665	16.25	13.50
17.85	48.49	166.77	920.26	3,935.59	8.09	23.598	4.277	14.26	11.83
24 x 24 x 40.8	159.80	672.28	1,074.84	10,288.14	10.52	15.303	9.572	47.00	24.00
35.7	140.20	599.52	1,056.85	9,515.30	10.45	15.872	9.003	41.23	21.00
30.6	120.49	523.80	1,037.74	8,658.89	10.32	16.531	8.344	35.44	18.00
25.5	100.67	445.00	1,016.94	7,699.98	10.10	17.303	7.572	29.61	15.00
20.4	80.75	363.00	993.41	6,613.11	9.74	18.218	6.657	23.75	12.00
17.85	70.83	321.10	980.07	6,016.20	9.49	18.736	6.139	20.83	10.51
24 x 22 x 40.8	153.00	629.61	1,064.23	9,840.06	10.40	15.629	9.246	45.00	24.00
35.7	134.25	561.52	1,046.34	9,089.78	10.32	16.188	8.687	39.48	21.00
30.6	115.39	490.66	1,027.28	8,259.94	10.17	16.834	8.041	33.94	18.00
25.5	96.42	416.91	1,006.48	7,333.01	9.93	17.589	7.286	28.36	15.00
20.4	77.35	340.13	982.82	6,285.54	9.57	18.480	6.395	22.75	12.00
17.85	67.85	300.90	969.36	5,711.81	9.31	18.983	5.892	19.96	10.51



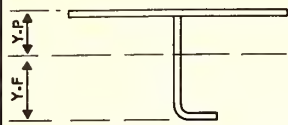
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	586.88	1,052.31	9,371.84	10.27	15.969	8.906	43.00	24.00
35.7	128.30	523.48	1,034.53	8,646.47	10.17	16.517	8.358	37.73	21.00
30.6	110.29	457.49	1,015.55	7,845.73	10.01	17.149	7.726	32.44	18.00
25.5	92.17	388.79	994.75	6,953.48	9.76	17.885	6.990	27.11	15.00
20.4	73.95	317.26	970.97	5,948.29	9.37	18.749	6.126	21.75	12.00
17.85	64.87	280.69	957.38	5,399.23	9.11	19.235	5.640	19.08	10.51
24 x 18 x 40.8	139.40	544.08	1,038.82	8,882.08	10.11	16.325	8.550	41.00	24.00
35.7	122.35	485.40	1,021.20	8,184.22	9.99	16.861	8.014	35.98	21.00
30.6	105.19	424.30	1,002.30	7,415.36	9.82	17.477	7.398	30.94	18.00
25.5	87.92	360.66	981.52	6,560.74	9.56	18.191	6.684	25.86	15.00
20.4	70.55	294.38	957.63	5,600.93	9.16	19.026	5.849	20.75	12.00
17.85	61.89	260.48	943.91	5,078.10	8.90	19.495	5.380	18.20	10.51
24 x 16 x 40.8	132.60	501.23	1,023.45	8,369.27	9.93	16.697	8.178	39.00	24.00
35.7	116.40	447.28	1,006.00	7,701.79	9.80	17.219	7.656	34.23	21.00
30.6	100.09	391.08	987.23	6,967.85	9.61	17.817	7.058	29.44	18.00
25.5	83.67	332.52	966.48	6,154.08	9.34	18.507	6.368	24.61	15.00
20.4	67.15	271.49	942.49	5,243.00	8.93	19.312	5.563	19.75	12.00
17.85	58.92	240.26	928.63	4,748.09	8.66	19.762	5.113	17.33	10.51
24 x 14 x 40.8	125.80	458.32	1,005.75	7,831.73	9.72	17.088	7.787	37.00	24.00
35.7	110.45	409.12	988.52	7,197.84	9.58	17.594	7.281	32.48	21.00
30.6	94.99	357.83	969.92	6,502.18	9.38	18.171	6.704	27.94	18.00
25.5	79.42	304.36	949.24	5,732.76	9.10	18.836	6.039	23.36	15.00
20.4	63.75	248.59	925.17	4,874.00	8.68	19.607	5.268	18.75	12.00
17.85	55.94	220.04	911.17	4,408.81	8.41	20.036	4.839	16.45	10.51
24 x 12 x 40.8	119.00	415.34	985.17	7,267.64	9.48	17.498	7.377	35.00	24.00
35.7	104.50	370.91	968.22	6,670.90	9.33	17.985	6.890	30.73	21.00
30.6	89.89	324.55	949.83	6,017.21	9.12	18.540	6.335	26.44	18.00
25.5	75.17	276.18	929.27	5,295.95	8.82	19.176	5.699	22.11	15.00
20.4	60.35	225.68	905.14	4,493.41	8.40	19.911	4.964	17.75	12.00
17.85	52.96	199.81	891.02	4,059.86	8.12	20.319	4.556	15.58	10.51
24 x 10 x 40.8	112.20	372.31	960.93	6,674.97	9.20	17.929	6.946	33.00	24.00
35.7	98.55	332.66	944.35	6,119.34	9.04	18.395	6.480	28.98	21.00
30.6	84.79	291.25	926.24	5,511.72	8.82	18.924	5.951	24.94	18.00
25.5	70.92	247.98	905.86	4,842.80	8.51	19.529	5.346	20.86	15.00
20.4	56.95	202.76	881.74	4,100.68	8.09	20.224	4.651	16.75	12.00
17.85	49.98	179.57	867.51	3,700.84	7.81	20.609	4.266	14.70	10.51
24 x 8 x 40.8	105.40	329.21	931.95	6,051.50	8.87	18.382	6.493	31.00	24.00
35.7	92.60	294.37	915.86	5,541.40	8.70	18.824	6.051	27.23	21.00
30.6	79.69	257.92	898.16	4,984.37	8.48	19.325	5.550	23.44	18.00
25.5	66.67	219.77	878.05	4,372.37	8.17	19.895	4.980	19.61	15.00
20.4	53.55	179.83	854.01	3,695.22	7.74	20.548	4.327	15.75	12.00
17.85	47.00	159.33	839.71	3,331.29	7.47	20.908	3.967	13.82	10.51
24 x 6 x 40.8	98.60	286.06	896.72	5,394.76	8.48	18.859	6.016	29.00	24.00
35.7	86.65	256.04	881.28	4,935.15	8.31	19.275	5.600	25.48	21.00
30.6	74.59	224.56	864.14	4,433.72	8.08	19.744	5.131	21.94	18.00
25.5	62.42	191.54	844.47	3,883.65	7.77	20.276	4.599	18.36	15.00
20.4	50.15	156.90	820.65	3,276.40	7.35	20.883	3.992	14.75	12.00
17.85	44.02	139.08	806.34	2,950.74	7.08	21.216	3.659	12.95	10.51
21 x 20 x 40.8	136.00	497.44	908.87	7,032.50	9.05	14.137	7.738	40.00	21.00
35.7	119.37	443.82	894.92	6,490.03	8.95	14.623	7.252	35.11	18.37
30.6	102.64	387.94	879.75	5,889.19	8.80	15.181	6.694	30.19	15.75
25.5	85.80	329.69	862.74	5,217.98	8.56	15.827	6.048	25.23	13.12
20.4	68.85	269.01	842.69	4,460.64	8.21	16.582	5.293	20.25	10.50
17.85	60.40	237.98	830.91	4,046.79	7.97	17.005	4.870	17.77	9.20
21 x 18 x 40.8	129.20	459.92	897.31	6,651.52	8.90	14.462	7.413	38.00	21.00
35.7	113.42	410.42	883.41	6,130.00	8.79	14.936	6.939	33.36	18.37



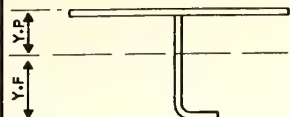
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 30.6	97.54	358.80	868.23	5,553.69	8.63	15.478	6.397	28.69	15.75
25.5	81.55	304.99	851.13	4,911.69	8.38	16.104	5.771	23.98	13.12
20.4	65.45	248.92	830.85	4,189.80	8.02	16.832	5.043	19.25	10.50
17.85	57.43	220.23	818.87	3,796.51	7.77	17.239	4.636	16.89	9.20
21 x 16 x 40.8	122.40	422.34	884.05	6,251.95	8.73	14.803	7.072	36.00	21.00
35.7	107.47	376.97	870.22	5,753.72	8.61	15.263	6.612	31.61	18.37
30.6	92.44	329.64	855.04	5,204.43	8.44	15.788	6.087	27.19	15.75
25.5	77.30	280.28	837.85	4,594.25	8.18	16.392	5.483	22.73	13.12
20.4	62.05	228.81	817.34	3,910.53	7.81	17.091	4.784	18.25	10.50
17.85	54.45	202.48	805.16	3,539.16	7.56	17.479	4.396	16.01	9.20
21 x 14 x 40.8	115.60	384.70	868.68	5,832.39	8.54	15.161	6.714	34.00	21.00
35.7	101.52	343.47	854.94	5,360.08	8.41	15.605	6.270	29.86	18.37
30.6	87.34	300.45	839.79	4,840.54	8.22	16.111	5.764	25.69	15.75
25.5	73.05	255.55	822.53	4,265.05	7.95	16.690	5.185	21.48	13.12
20.4	58.65	208.70	801.78	3,622.41	7.57	17.357	4.518	17.25	10.50
17.85	51.47	184.71	789.39	3,274.42	7.32	17.727	4.148	15.14	9.20
21 x 12 x 40.8	108.80	346.99	850.65	5,391.30	8.32	15.537	6.338	32.00	21.00
35.7	95.57	309.94	837.05	4,947.84	8.17	15.964	5.911	28.11	18.37
30.6	82.24	271.23	821.96	4,461.09	7.98	16.448	5.427	24.19	15.75
25.5	68.80	230.80	804.65	3,923.41	7.70	16.999	4.876	20.23	13.12
20.4	55.25	188.58	783.68	3,325.03	7.31	17.632	4.243	16.25	10.50
17.85	48.49	166.95	771.06	3,001.98	7.06	17.982	3.893	14.26	9.20
21 x 10 x 40.8	102.00	309.23	829.20	4,927.00	8.05	15.933	5.942	30.00	21.00
35.7	89.62	276.36	815.80	4,515.64	7.90	16.340	5.535	26.36	18.37
30.6	77.14	241.98	800.83	4,065.06	7.70	16.799	5.076	22.69	15.75
25.5	64.55	206.04	783.51	3,568.61	7.41	17.320	4.555	18.98	13.12
20.4	51.85	168.45	762.34	3,017.94	7.02	17.916	3.959	15.25	10.50
17.85	45.51	149.17	749.51	2,721.50	6.77	18.244	3.631	13.39	9.20
21 x 8 x 40.8	95.20	271.40	803.27	4,437.58	7.75	16.351	5.524	28.00	21.00
35.7	83.67	242.74	790.15	4,062.01	7.59	16.734	5.141	24.61	18.37
30.6	72.04	212.71	775.38	3,651.33	7.38	17.166	4.709	21.19	15.75
25.5	60.30	181.25	758.13	3,199.89	7.09	17.654	4.221	17.73	13.12
20.4	48.45	148.31	736.81	2,700.64	6.70	18.210	3.665	14.25	10.50
17.85	42.53	131.39	723.80	2,432.60	6.45	18.514	3.361	12.51	9.20
21 x 6 x 40.8	88.40	233.51	771.28	3,920.96	7.38	16.791	5.084	26.00	21.00
35.7	77.72	209.07	758.59	3,585.31	7.22	17.149	4.726	22.86	18.37
30.6	66.94	183.40	744.16	3,218.69	7.00	17.550	4.325	19.69	15.75
25.5	56.05	156.45	727.09	2,816.40	6.72	18.001	3.874	16.48	13.12
20.4	45.05	128.16	705.74	2,372.62	6.33	18.513	3.362	13.25	10.50
17.85	39.56	113.61	692.59	2,134.92	6.09	18.792	3.083	11.63	9.20
18 x 18 x 40.8	119.00	379.79	757.67	4,774.98	7.68	12.573	6.302	35.00	18.00
35.7	104.50	339.08	747.04	4,402.07	7.58	12.982	5.893	30.73	15.75
30.6	89.89	296.56	735.10	3,988.50	7.42	13.449	5.426	26.44	13.50
25.5	75.17	252.16	721.22	3,526.54	7.20	13.985	4.890	22.11	11.25
20.4	60.35	205.83	704.12	3,006.26	6.87	14.605	4.270	17.75	9.00
15.3	45.42	157.52	681.00	2,414.64	6.38	15.329	3.546	13.36	6.75
18 x 16 x 40.8	112.20	347.55	746.45	4,475.93	7.53	12.879	5.996	33.00	18.00
35.7	98.55	310.36	735.77	4,120.13	7.42	13.275	5.600	28.98	15.75
30.6	84.79	271.50	723.74	3,726.59	7.25	13.726	5.149	24.94	13.50
25.5	70.92	230.91	709.66	3,288.44	7.02	14.241	4.634	20.86	11.25
20.4	56.95	188.54	692.20	2,796.87	6.68	14.834	4.041	16.75	9.00
15.3	42.87	144.33	668.44	2,240.48	6.19	15.523	3.352	12.61	6.75
18 x 14 x 40.8	105.40	315.24	733.33	4,161.33	7.35	13.200	5.675	31.00	18.00
35.7	92.60	281.59	722.64	3,824.70	7.23	13.582	5.293	27.23	15.75
30.6	79.69	246.41	710.51	3,453.37	7.06	14.015	4.860	23.44	13.50
25.5	66.67	209.64	696.23	3,041.26	6.81	14.507	4.368	19.61	11.25



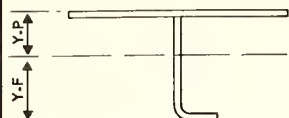
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 20.4	53.55	171.24	678.39	2,580.69	6.47	15.071	3.804	15.75	9.00
15.3	40.32	131.14	653.96	2,061.79	5.97	15.722	3.153	11.86	6.75
18 x 12 x 40.8	98.60	282.87	717.81	3,829.95	7.15	13.539	5.336	29.00	18.00
35.7	86.65	252.78	707.12	3,514.81	7.01	13.904	4.971	25.48	15.75
30.6	74.59	221.30	694.91	3,168.08	6.83	14.316	4.559	21.94	13.50
25.5	62.42	188.36	680.43	2,784.48	6.58	14.783	4.092	18.36	11.25
20.4	50.15	153.93	662.20	2,357.40	6.23	15.315	3.560	14.75	9.00
15.3	37.77	117.94	637.06	1,878.41	5.74	15.926	2.949	11.11	6.75
18 x 10 x 40.8	91.80	250.44	699.15	3,480.40	6.91	13.897	4.978	27.00	18.00
35.7	80.70	223.93	688.49	3,189.35	6.77	14.243	4.632	23.73	15.75
30.6	69.49	196.15	676.23	2,869.89	6.58	14.631	4.244	20.44	13.50
25.5	58.17	167.06	661.57	2,517.52	6.32	15.070	3.805	17.11	11.25
20.4	46.75	136.61	642.96	2,126.62	5.97	15.567	3.308	13.75	9.00
15.3	35.22	104.74	617.09	1,690.14	5.48	16.136	2.739	10.36	6.75
18 x 8 x 40.8	85.00	217.95	676.29	3,111.16	6.62	14.275	4.600	25.00	18.00
35.7	74.75	195.03	665.73	2,847.13	6.47	14.598	4.277	21.98	15.75
30.6	64.39	170.98	653.47	2,557.92	6.28	14.961	3.914	18.94	13.50
25.5	53.92	145.74	638.67	2,239.75	6.02	15.368	3.507	15.86	11.25
20.4	43.35	119.28	619.71	1,887.97	5.67	15.828	3.047	12.75	9.00
15.3	32.67	91.54	593.12	1,496.79	5.19	16.351	2.524	9.61	6.75
18 x 6 x 40.8	78.20	185.39	647.63	2,720.50	6.28	14.674	4.201	23.00	18.00
35.7	68.80	166.09	637.28	2,486.81	6.13	14.973	3.902	20.23	15.75
30.6	59.29	145.77	625.13	2,231.18	5.93	15.306	3.569	17.44	13.50
25.5	49.67	124.40	610.29	1,950.52	5.68	15.679	3.196	14.61	11.25
20.4	39.95	101.94	591.05	1,641.06	5.33	16.098	2.777	11.75	9.00
15.3	30.12	78.33	563.83	1,298.14	4.87	16.573	2.302	8.86	6.75



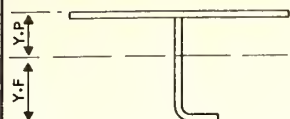
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,067.47	1,756.66	20,583.54	13.15	19.283	11.717	59.00	30.00
35.7	175.90	949.67	1,727.32	18,996.00	13.04	20.003	10.997	51.73	26.25
30.6	151.09	827.78	1,696.27	17,245.46	12.85	20.833	10.167	44.44	22.50
25.5	126.17	701.63	1,662.64	15,295.69	12.55	21.800	9.200	37.11	18.75
20.4	101.15	571.03	1,624.74	13,098.30	12.08	22.938	8.062	29.75	15.00
17.85	88.70	504.54	1,603.34	11,897.00	11.76	23.580	7.420	26.09	13.14
30 x 27 x 40.8	190.40	986.30	1,735.94	19,497.57	12.96	19.768	11.232	56.00	30.00
35.7	166.97	877.57	1,706.79	17,966.82	12.83	20.473	10.527	49.11	26.25
30.6	143.44	765.04	1,675.85	16,282.90	12.62	21.284	9.716	42.19	22.50
25.5	119.80	648.54	1,642.19	14,412.85	12.30	22.223	8.777	35.23	18.75
20.4	96.05	527.92	1,604.06	12,313.01	11.81	23.324	7.676	28.25	15.00
17.85	84.23	466.49	1,582.42	11,168.77	11.48	23.942	7.058	24.77	13.14
30 x 24 x 40.8	180.20	905.03	1,712.10	18,353.94	12.74	20.280	10.720	53.00	30.00
35.7	158.05	805.39	1,683.18	16,886.91	12.59	20.967	10.033	46.48	26.25
30.6	135.79	702.24	1,652.37	15,277.00	12.36	21.755	9.245	39.94	22.50
25.5	113.42	595.43	1,618.72	13,494.54	12.02	22.663	8.337	33.36	18.75
20.4	90.95	484.79	1,580.36	11,500.57	11.51	23.723	7.277	26.75	15.00
17.85	79.76	428.44	1,558.46	10,417.62	11.17	24.315	6.685	23.46	13.14
30 x 21 x 40.8	170.00	823.66	1,684.36	17,147.95	12.49	20.819	10.181	50.00	30.00
35.7	149.12	733.14	1,655.73	15,752.42	12.32	21.486	9.514	43.86	26.25
30.6	128.14	639.40	1,625.12	14,224.77	12.07	22.247	8.753	37.69	22.50
25.5	107.05	542.29	1,591.50	12,538.60	11.71	23.122	7.878	31.48	18.75
20.4	85.85	441.65	1,552.92	10,659.54	11.18	24.136	6.864	25.25	15.00
17.85	75.30	390.37	1,530.76	9,642.44	10.83	24.701	6.299	22.15	13.14
30 x 18 x 40.8	159.80	742.17	1,651.69	15,874.35	12.18	21.389	9.611	47.00	30.00
35.7	140.20	660.82	1,623.44	14,559.10	11.99	22.032	8.968	41.23	26.25
30.6	120.49	576.51	1,593.09	13,122.93	11.73	22.763	8.237	35.44	22.50
25.5	100.67	489.12	1,559.57	11,542.65	11.35	23.599	7.401	29.61	18.75
20.4	80.75	398.49	1,520.79	9,788.38	10.81	24.564	6.436	23.75	15.00
17.85	70.83	352.29	1,498.37	8,842.05	10.46	25.099	5.901	20.83	13.14
30 x 15 x 40.8	149.60	660.58	1,612.64	14,527.28	11.82	21.992	9.008	44.00	30.00
35.7	131.27	588.42	1,584.88	13,302.26	11.61	22.607	8.393	38.61	26.25
30.6	112.84	513.57	1,554.90	11,967.88	11.33	23.303	7.697	33.19	22.50
25.5	94.30	435.92	1,521.56	10,504.14	10.94	24.096	6.904	27.73	18.75
20.4	75.65	355.32	1,482.65	8,885.45	10.39	25.007	5.993	22.25	15.00
17.85	66.36	314.20	1,459.96	8,015.21	10.04	25.510	5.490	19.52	13.14
30 x 12 x 40.8	139.40	578.89	1,565.13	13,100.21	11.39	22.630	8.370	41.00	30.00
35.7	122.35	515.95	1,538.05	11,976.68	11.17	23.213	7.787	35.98	26.25
30.6	105.19	450.59	1,508.60	10,755.69	10.88	23.870	7.130	30.94	22.50
25.5	87.92	382.69	1,475.57	9,420.27	10.47	24.616	6.384	25.86	18.75
20.4	70.55	312.13	1,436.63	7,948.98	9.92	25.467	5.533	20.75	15.00
17.85	61.89	276.10	1,413.72	7,160.59	9.57	25.935	5.065	18.20	13.14
30 x 9 x 40.8	129.20	497.09	1,506.09	11,585.78	10.87	23.307	7.693	38.00	30.00
35.7	113.42	443.40	1,479.96	10,576.57	10.64	23.853	7.147	33.36	26.25
30.6	97.54	387.55	1,451.29	9,481.99	10.34	24.467	6.533	28.69	22.50
25.5	81.55	329.43	1,418.80	8,288.01	9.93	25.158	5.842	23.98	18.75
20.4	65.45	268.93	1,380.01	6,977.05	9.38	25.944	5.056	19.25	15.00
17.85	57.43	237.99	1,356.96	6,276.76	9.04	26.374	4.626	16.89	13.14
30 x 6 x 40.8	119.00	415.18	1,430.75	9,975.72	10.25	24.028	6.972	35.00	30.00
35.7	104.50	370.78	1,405.98	9,095.45	10.01	24.531	6.469	30.73	26.25
30.6	89.89	324.46	1,378.51	8,141.99	9.71	25.094	5.906	26.44	22.50
25.5	75.17	276.14	1,346.95	7,104.04	9.30	25.726	5.274	22.11	18.75
20.4	60.35	225.71	1,308.66	5,967.63	8.76	26.440	4.560	17.75	15.00
17.85	52.96	199.86	1,285.64	5,362.19	8.42	26.829	4.171	15.58	13.14
27 x 27 x 40.8	180.20	867.55	1,547.96	15,566.93	11.74	17.944	10.056	53.00	27.00
35.7	158.05	771.93	1,523.80	14,346.47	11.61	18.585	9.415	46.48	23.62
30.6	135.79	672.92	1,497.83	13,000.87	11.41	19.320	8.680	39.94	20.25



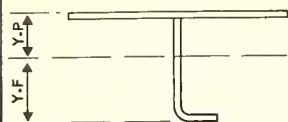
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	570.38	1,469.10	11,504.09	11.10	20.169	7.831	33.36	16.87
20.4	90.95	464.18	1,435.82	9,821.88	10.64	21.159	6.841	26.75	13.50
17.85	79.76	410.12	1,416.54	8,905.12	10.33	21.713	6.287	23.46	11.83
27 x 24 x 40.8	170.00	794.22	1,526.92	14,628.95	11.53	18.419	9.581	50.00	27.00
35.7	149.12	706.79	1,502.86	13,459.94	11.38	19.044	8.956	43.86	23.62
30.6	128.14	616.23	1,476.88	12,174.60	11.16	19.757	8.243	37.69	20.25
25.5	107.05	522.43	1,448.00	10,749.58	10.84	20.576	7.424	31.48	16.87
20.4	85.85	425.25	1,414.33	9,154.50	10.36	21.527	6.473	25.25	13.50
17.85	75.30	375.76	1,394.70	8,288.30	10.04	22.057	5.943	22.15	11.83
27 x 21 x 40.8	159.80	720.78	1,502.31	13,638.39	11.29	18.922	9.078	47.00	27.00
35.7	140.20	641.57	1,478.38	12,527.46	11.12	19.526	8.474	41.23	23.62
30.6	120.49	559.50	1,452.43	11,309.37	10.89	20.213	7.787	35.44	20.25
25.5	100.67	474.45	1,423.41	9,963.49	10.54	21.000	7.000	29.61	16.87
20.4	80.75	386.30	1,389.33	8,463.22	10.05	21.908	6.092	23.75	13.50
17.85	70.83	341.39	1,369.33	7,651.43	9.73	22.412	5.588	20.83	11.83
27 x 18 x 40.8	149.60	647.23	1,473.13	12,590.69	11.00	19.453	8.547	44.00	27.00
35.7	131.27	576.28	1,449.39	11,545.33	10.82	20.034	7.966	38.61	23.62
30.6	112.84	502.71	1,423.51	10,402.36	10.57	20.692	7.308	33.19	20.25
25.5	94.30	426.44	1,394.39	9,143.81	10.21	21.442	6.558	27.73	16.87
20.4	75.65	347.33	1,359.88	7,746.73	9.70	22.303	5.697	22.25	13.50
17.85	66.36	307.02	1,339.50	6,993.52	9.38	22.779	5.221	19.52	11.83
27 x 15 x 40.8	139.40	573.58	1,437.99	11,480.77	10.66	20.016	7.984	41.00	27.00
35.7	122.35	510.91	1,414.53	10,509.49	10.46	20.570	7.430	35.98	23.62
30.6	105.19	445.88	1,388.79	9,450.47	10.19	21.195	6.805	30.94	20.25
25.5	87.92	378.40	1,359.60	8,288.33	9.83	21.904	6.096	25.86	16.87
20.4	70.55	308.35	1,324.70	7,003.62	9.31	22.713	5.287	20.75	13.50
17.85	61.89	272.63	1,303.92	6,313.49	8.99	23.158	4.842	18.20	11.83
27 x 12 x 40.8	129.20	499.81	1,394.83	10,302.90	10.25	20.614	7.386	38.00	27.00
35.7	113.42	445.46	1,371.79	9,415.42	10.04	21.136	6.864	33.36	23.62
30.6	97.54	389.00	1,346.31	8,450.30	9.76	21.723	6.277	28.69	20.25
25.5	81.55	330.33	1,317.15	7,394.65	9.38	22.386	5.614	23.98	16.87
20.4	65.45	269.35	1,281.91	6,232.38	8.87	23.138	4.862	19.25	13.50
17.85	57.43	238.23	1,260.75	5,610.23	8.54	23.550	4.450	16.89	11.83
27 x 9 x 40.8	119.00	425.94	1,340.58	9,050.67	9.76	21.249	6.751	35.00	27.00
35.7	104.50	379.94	1,318.17	8,258.05	9.54	21.735	6.265	30.73	23.62
30.6	89.89	332.06	1,293.16	7,398.05	9.25	22.279	5.721	26.44	20.25
25.5	75.17	282.23	1,264.21	6,460.17	8.87	22.890	5.110	22.11	16.87
20.4	60.35	230.34	1,228.76	5,431.38	8.36	23.580	4.420	17.75	13.50
17.85	52.96	203.81	1,207.27	4,882.51	8.04	23.956	4.044	15.58	11.83
27 x 6 x 40.8	108.80	351.96	1,270.31	7,716.78	9.16	21.925	6.075	32.00	27.00
35.7	95.57	314.34	1,248.92	7,031.73	8.93	22.370	5.630	28.11	23.62
30.6	82.24	275.08	1,224.72	6,289.57	8.64	22.864	5.136	24.19	20.25
25.5	68.80	234.10	1,196.31	5,482.01	8.27	23.418	4.582	20.23	16.87
20.4	55.25	191.31	1,160.96	4,598.87	7.77	24.039	3.961	16.25	13.50
17.85	48.49	169.39	1,139.28	4,129.03	7.46	24.376	3.624	14.26	11.83
24 x 24 x 40.8	159.80	687.41	1,343.59	11,368.76	10.31	16.539	8.461	47.00	24.00
35.7	140.20	611.82	1,323.91	10,461.16	10.17	17.098	7.902	41.23	21.00
30.6	120.49	533.47	1,302.29	9,461.06	9.96	17.735	7.265	35.44	18.00
25.5	100.67	452.25	1,277.73	8,350.57	9.65	18.465	6.535	29.61	15.00
20.4	80.75	368.09	1,248.29	7,106.63	9.21	19.307	5.693	23.75	12.00
17.85	70.83	325.22	1,230.72	6,431.14	8.92	19.774	5.226	20.83	10.51
24 x 22 x 40.8	153.00	643.81	1,329.62	10,844.32	10.16	16.844	8.156	45.00	24.00
35.7	134.25	573.08	1,309.93	9,966.73	10.01	17.391	7.609	39.48	21.00
30.6	115.39	499.75	1,288.22	9,001.71	9.79	18.012	6.988	33.94	18.00
25.5	96.42	423.73	1,263.46	7,932.83	9.48	18.721	6.279	28.36	15.00
20.4	77.35	344.93	1,233.63	6,739.05	9.02	19.537	5.463	22.75	12.00
17.85	67.85	304.79	1,215.75	6,092.45	8.73	19.989	5.011	19.96	10.51



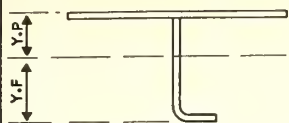
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	600.16	1,313.95	10,299.52	10.00	17.161	7.839	43.00	24.00
35.7	128.30	534.31	1,294.26	9,454.61	9.84	17.695	7.305	37.73	21.00
30.6	110.29	466.02	1,272.47	8,527.46	9.60	18.298	6.702	32.44	18.00
25.5	92.17	395.20	1,247.50	7,503.10	9.28	18.985	6.015	27.11	15.00
20.4	73.95	321.77	1,217.26	6,362.49	8.82	19.773	5.227	21.75	12.00
17.85	64.87	284.36	1,199.07	5,746.27	8.52	20.208	4.792	19.08	10.51
24 x 18 x 40.8	139.40	556.46	1,296.26	9,733.16	9.82	17.491	7.509	41.00	24.00
35.7	122.35	495.50	1,276.58	8,923.81	9.64	18.010	6.990	35.98	21.00
30.6	105.19	432.26	1,254.72	8,037.56	9.40	18.594	6.406	30.94	18.00
25.5	87.92	366.66	1,229.55	7,060.87	9.07	19.257	5.743	25.86	15.00
20.4	70.55	298.61	1,198.89	5,976.59	8.60	20.015	4.985	20.75	12.00
17.85	61.89	263.92	1,180.36	5,392.33	8.30	20.432	4.568	18.20	10.51
24 x 16 x 40.8	132.60	512.71	1,276.12	9,143.92	9.61	17.835	7.165	39.00	24.00
35.7	116.40	456.66	1,256.48	8,373.30	9.43	18.336	6.664	34.23	21.00
30.6	100.09	398.48	1,234.57	7,531.23	9.18	18.900	6.100	29.44	18.00
25.5	83.67	338.10	1,209.20	6,605.56	8.84	19.537	5.463	24.61	15.00
20.4	67.15	275.43	1,178.11	5,581.02	8.37	20.263	4.737	19.75	12.00
17.85	58.92	243.48	1,159.24	5,030.37	8.07	20.661	4.339	17.33	10.51
24 x 14 x 40.8	125.80	468.91	1,253.00	8,530.38	9.38	18.192	6.808	37.00	24.00
35.7	110.45	417.78	1,233.43	7,801.96	9.18	18.675	6.325	32.48	21.00
30.6	94.99	364.68	1,211.49	7,007.64	8.93	19.216	5.784	27.94	18.00
25.5	79.42	309.53	1,185.94	6,136.61	8.58	19.826	5.174	23.36	15.00
20.4	63.75	252.25	1,154.42	5,175.41	8.11	20.517	4.483	18.75	12.00
17.85	55.94	223.03	1,135.18	4,660.12	7.81	20.895	4.105	16.45	10.51
24 x 12 x 40.8	119.00	425.06	1,226.17	7,891.02	9.11	18.564	6.436	35.00	24.00
35.7	104.50	378.87	1,206.73	7,208.59	8.91	19.026	5.974	30.73	21.00
30.6	89.89	330.86	1,184.80	6,465.87	8.65	19.543	5.457	26.44	18.00
25.5	75.17	280.95	1,159.09	5,653.37	8.30	20.123	4.877	22.11	15.00
20.4	60.35	229.06	1,127.15	4,759.36	7.82	20.778	4.222	17.75	12.00
17.85	52.96	202.57	1,107.56	4,281.28	7.53	21.134	3.866	15.58	10.51
24 x 10 x 40.8	112.20	381.16	1,194.66	7,224.17	8.81	18.953	6.047	33.00	24.00
35.7	98.55	339.93	1,175.42	6,591.88	8.61	19.392	5.608	28.98	21.00
30.6	84.79	297.01	1,153.57	5,904.97	8.34	19.881	5.119	24.94	18.00
25.5	70.92	252.35	1,127.76	5,155.20	7.98	20.429	4.571	20.86	15.00
20.4	56.95	205.87	1,095.44	4,332.47	7.51	21.045	3.955	16.75	12.00
17.85	49.98	182.11	1,075.50	3,893.56	7.22	21.380	3.620	14.70	10.51
24 x 8 x 40.8	105.40	337.22	1,157.14	6,528.01	8.47	19.359	5.641	31.00	24.00
35.7	92.60	300.95	1,138.22	5,950.43	8.26	19.772	5.228	27.23	21.00
30.6	79.69	263.15	1,116.55	5,323.90	7.99	20.232	4.768	23.44	18.00
25.5	66.67	223.74	1,090.72	4,641.38	7.64	20.745	4.255	19.61	15.00
20.4	53.55	182.66	1,058.10	3,894.31	7.17	21.320	3.680	15.75	12.00
17.85	47.00	161.65	1,037.84	3,496.64	6.88	21.631	3.369	13.82	10.51
24 x 6 x 40.8	98.60	293.22	1,111.71	5,800.57	8.07	19.782	5.218	29.00	24.00
35.7	86.65	261.94	1,093.27	5,282.73	7.86	20.168	4.832	25.48	21.00
30.6	74.59	229.25	1,071.94	4,721.57	7.59	20.595	4.405	21.94	18.00
25.5	62.42	195.11	1,046.26	4,111.18	7.24	21.071	3.929	18.36	15.00
20.4	50.15	159.45	1,013.48	3,444.42	6.79	21.601	3.399	14.75	12.00
17.85	44.02	141.18	992.98	3,090.18	6.51	21.888	3.112	12.95	10.51
21 x 20 x 40.8	136.00	508.23	1,136.34	7,725.66	8.79	15.201	6.799	40.00	21.00
35.7	119.37	452.60	1,120.36	7,092.14	8.64	15.670	6.330	35.11	18.37
30.6	102.64	394.84	1,102.27	6,395.53	8.42	16.198	5.802	30.19	15.75
25.5	85.80	334.88	1,080.94	5,624.85	8.12	16.796	5.204	25.23	13.12
20.4	68.85	272.68	1,054.28	4,766.24	7.71	17.479	4.521	20.25	10.50
17.85	60.40	240.98	1,037.83	4,302.47	7.44	17.854	4.146	17.77	9.20
21 x 18 x 40.8	129.20	469.92	1,120.90	7,284.42	8.62	15.501	6.499	38.00	21.00
35.7	113.42	418.57	1,104.83	6,678.37	8.46	15.955	6.045	33.36	18.37
30.6	97.54	365.22	1,086.55	6,013.56	8.23	16.465	5.535	28.69	15.75



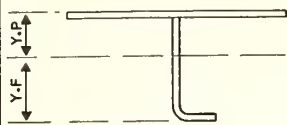
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	309.83	1,064.90	5,280.10	7.93	17.042	4.958	23.98	13.12
20.4	65.45	252.34	1,037.69	4,465.63	7.51	17.697	4.303	19.25	10.50
17.85	57.43	223.03	1,020.84	4,026.91	7.24	18.055	3.945	16.89	9.20
21 x 16 x 40.8	122.40	431.57	1,103.23	6,824.80	8.43	15.814	6.186	36.00	21.00
35.7	107.47	384.50	1,087.08	6,248.81	8.26	16.252	5.748	31.61	18.37
30.6	92.44	335.59	1,068.61	5,618.46	8.03	16.742	5.258	27.19	15.75
25.5	77.30	284.77	1,046.63	4,924.94	7.72	17.294	4.706	22.73	13.12
20.4	62.05	232.00	1,018.84	4,157.33	7.29	17.920	4.080	18.25	10.50
17.85	54.45	205.08	1,001.56	3,745.00	7.02	18.261	3.739	16.01	9.20
21 x 14 x 40.8	115.60	393.17	1,082.80	6,345.63	8.22	16.140	5.860	34.00	21.00
35.7	101.52	350.40	1,066.58	5,802.52	8.04	16.560	5.440	29.86	18.37
30.6	87.34	305.92	1,047.94	5,209.52	7.80	17.029	4.971	25.69	15.75
25.5	73.05	259.69	1,025.61	4,558.89	7.48	17.555	4.445	21.48	13.12
20.4	58.65	211.65	997.23	3,841.06	7.05	18.148	3.852	17.25	10.50
17.85	51.47	187.13	979.51	3,456.52	6.78	18.471	3.529	15.14	9.20
21 x 12 x 40.8	108.80	354.72	1,058.92	5,845.63	7.97	16.480	5.520	32.00	21.00
35.7	95.57	316.26	1,042.66	5,338.50	7.78	16.880	5.120	28.11	18.37
30.6	82.24	276.24	1,023.86	4,786.02	7.54	17.326	4.674	24.19	15.75
25.5	68.80	234.60	1,001.20	4,181.43	7.22	17.824	4.176	20.23	13.12
20.4	55.25	191.29	972.21	3,516.49	6.79	18.383	3.617	16.25	10.50
17.85	48.49	169.17	954.04	3,161.23	6.52	18.686	3.314	14.26	9.20
21 x 10 x 40.8	102.00	316.22	1,030.62	5,323.42	7.69	16.835	5.165	30.00	21.00
35.7	89.62	282.09	1,014.37	4,855.68	7.50	17.213	4.787	26.36	18.37
30.6	77.14	246.53	995.46	4,347.15	7.25	17.633	4.367	22.69	15.75
25.5	64.55	209.50	972.49	3,792.03	6.93	18.101	3.899	18.98	13.12
20.4	51.85	170.92	942.91	3,183.29	6.50	18.624	3.376	15.25	10.50
17.85	45.51	151.21	924.29	2,858.89	6.24	18.907	3.093	13.39	9.20
21 x 8 x 40.8	95.20	277.66	996.55	4,777.48	7.37	17.206	4.794	28.00	21.00
35.7	83.67	247.89	980.40	4,352.90	7.17	17.560	4.440	24.61	18.37
30.6	72.04	216.81	961.45	3,892.07	6.92	17.952	4.048	21.19	15.75
25.5	60.30	184.38	938.24	3,390.10	6.60	18.387	3.613	17.73	13.12
20.4	48.45	150.55	908.12	2,841.12	6.19	18.871	3.129	14.25	10.50
17.85	42.53	133.24	889.07	2,549.25	5.93	19.133	2.867	12.51	9.20
21 x 6 x 40.8	88.40	239.06	954.74	4,206.15	6.99	17.594	4.406	26.00	21.00
35.7	77.72	213.64	938.85	3,828.88	6.80	17.922	4.078	22.86	18.37
30.6	66.94	187.05	919.99	3,419.85	6.55	18.283	3.717	19.69	15.75
25.5	56.05	159.24	896.68	2,975.04	6.24	18.682	3.318	16.48	13.12
20.4	45.05	130.17	866.14	2,489.61	5.83	19.126	2.874	13.25	10.50
17.85	39.56	115.27	846.75	2,232.03	5.58	19.364	2.636	11.63	9.20
18 x 18 x 40.8	119.00	387.72	946.90	5,226.63	7.42	13.480	5.520	35.00	18.00
35.7	104.50	345.55	933.99	4,792.37	7.27	13.869	5.131	30.73	15.75
30.6	89.89	301.66	918.85	4,314.91	7.07	14.304	4.696	26.44	13.50
25.5	75.17	256.01	900.32	3,787.31	6.79	14.793	4.207	22.11	11.25
20.4	60.35	208.58	876.20	3,201.05	6.42	15.347	3.653	17.75	9.00
15.3	45.42	159.33	841.76	2,545.40	5.89	15.976	3.024	13.36	6.75
18 x 16 x 40.8	112.20	354.83	931.62	4,882.24	7.25	13.759	5.241	33.00	18.00
35.7	98.55	316.30	918.52	4,470.35	7.09	14.133	4.867	28.98	15.75
30.6	84.79	276.20	903.07	4,018.67	6.88	14.550	4.450	24.94	13.50
25.5	70.92	234.47	884.08	3,521.10	6.60	15.017	3.983	20.86	11.25
20.4	56.95	191.09	859.26	2,970.15	6.22	15.543	3.457	16.75	9.00
15.3	42.87	146.01	823.71	2,356.50	5.70	16.139	2.861	12.61	6.75
18 x 14 x 40.8	105.40	321.88	913.83	4,522.72	7.05	14.051	4.949	31.00	18.00
35.7	92.60	287.02	900.53	4,135.40	6.89	14.408	4.592	27.23	15.75
30.6	79.69	250.71	884.78	3,711.78	6.67	14.805	4.195	23.44	13.50
25.5	66.67	212.91	865.31	3,246.53	6.39	15.248	3.752	19.61	11.25
20.4	53.55	173.59	839.74	2,733.15	6.01	15.745	3.255	15.75	9.00
15.3	40.32	132.69	803.04	2,163.66	5.49	16.306	2.694	11.86	6.75



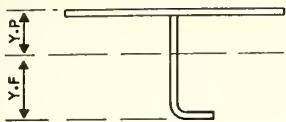
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60†

STEEL

.40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	288.89	892.86	4,147.05	6.83	14.355	4.645	29.00	18.00
35.7	86.65	257.71	879.38	3,786.75	6.66	14.694	4.306	25.48	15.75
30.6	74.59	225.21	863.31	3,393.67	6.44	15.069	3.931	21.94	13.50
25.5	62.42	191.34	843.34	2,963.20	6.15	15.486	3.514	18.36	11.25
20.4	50.15	156.08	817.02	2,489.82	5.77	15.953	3.047	14.75	9.00
15.3	37.77	119.37	779.12	1,966.75	5.26	16.476	2.524	11.11	6.75
18 x 10 x 40.8	91.80	255.84	867.77	3,754.12	6.57	14.674	4.326	27.00	18.00
35.7	80.70	228.36	854.13	3,423.53	6.39	14.992	4.008	23.73	15.75
30.6	69.49	199.68	837.76	3,063.68	6.17	15.343	3.657	20.44	13.50
25.5	58.17	169.76	817.31	2,670.69	5.89	15.732	3.268	17.11	11.25
20.4	46.75	138.56	790.21	2,239.88	5.51	16.165	2.835	13.75	9.00
15.3	35.22	106.05	751.11	1,765.64	5.01	16.649	2.351	10.36	6.75
18 x 8 x 40.8	85.00	222.74	837.21	3,342.70	6.27	15.007	3.993	25.00	18.00
35.7	74.75	198.98	823.47	3,044.81	6.09	15.302	3.698	21.98	15.75
30.6	64.39	174.13	806.86	2,721.17	5.87	15.627	3.373	18.94	13.50
25.5	53.92	148.16	785.96	2,368.53	5.59	15.986	3.014	15.86	11.25
20.4	43.35	121.04	758.13	1,983.08	5.22	16.384	2.616	12.75	9.00
15.3	32.67	92.72	717.88	1,560.20	4.73	16.827	2.173	9.61	6.75
18 x 6 x 40.8	78.20	189.59	799.18	2,911.47	5.92	15.357	3.643	23.00	18.00
35.7	68.80	169.55	785.45	2,649.57	5.75	15.627	3.373	20.23	15.75
30.6	59.29	148.55	768.70	2,365.38	5.53	15.923	3.077	17.44	13.50
25.5	49.67	126.55	747.47	2,056.26	5.25	16.249	2.751	14.61	11.25
20.4	39.95	103.50	719.03	1,719.12	4.89	16.609	2.391	11.75	9.00
15.3	30.12	79.39	677.81	1,350.29	4.43	17.008	1.992	8.86	6.75

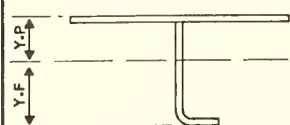


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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45.9 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,087.52	2,141.67	22,449.40	12.90	20.643	10.482	59.00	30.00
35.7	175.90	965.96	2,109.91	20,623.54	12.71	21.350	9.775	51.73	26.25
30.6	151.09	840.55	2,075.34	18,620.46	12.44	22.153	8.972	44.44	22.50
25.5	126.17	711.17	2,036.49	16,406.04	12.05	23.069	8.056	37.11	18.75
20.4	101.15	577.71	1,990.50	13,936.35	11.48	24.124	7.001	29.75	15.00
17.85	88.70	509.95	1,963.32	12,599.59	11.11	24.708	6.417	26.09	13.14
30 x 27 x 40.8	190.40	1,004.90	2,115.31	21,204.27	12.68	21.101	10.024	56.00	30.00
35.7	166.97	892.69	2,083.55	19,451.23	12.47	21.789	9.336	49.11	26.25
30.6	143.44	776.91	2,048.86	17,532.92	12.18	22.568	8.557	42.19	22.50
25.5	119.80	657.43	2,009.67	15,418.62	11.78	23.453	7.672	35.23	18.75
20.4	96.05	534.15	1,962.99	13,069.09	11.20	24.467	6.658	28.25	15.00
17.85	84.23	471.54	1,935.28	11,801.30	10.82	25.027	6.098	24.77	13.14
30 x 24 x 40.8	180.20	922.20	2,085.02	19,901.22	12.42	21.580	9.545	53.00	30.00
35.7	158.05	819.37	2,053.29	18,228.65	12.20	22.247	8.878	46.48	26.25
30.6	135.79	713.23	2,018.47	16,403.15	11.90	22.998	8.127	39.94	22.50
25.5	113.42	603.67	1,978.94	14,397.32	11.48	23.850	7.275	33.36	18.75
20.4	90.95	490.57	1,931.55	12,176.49	10.89	24.821	6.304	26.75	15.00
17.85	79.76	433.13	1,903.26	10,981.91	10.51	25.355	5.770	23.46	13.14
30 x 21 x 40.8	170.00	839.41	2,049.83	18,536.10	12.13	22.082	9.043	50.00	30.00
35.7	149.12	745.98	2,018.18	16,952.51	11.90	22.725	8.400	43.86	26.25
30.6	128.14	649.51	1,983.28	15,228.64	11.58	23.446	7.679	37.69	22.50
25.5	107.05	549.88	1,943.41	13,340.37	11.14	24.261	6.864	31.48	18.75
20.4	85.85	446.99	1,895.27	11,257.43	10.55	25.185	5.940	25.25	15.00
17.85	75.30	394.70	1,866.37	10,140.56	10.17	25.692	5.433	22.15	13.14
30 x 18 x 40.8	159.80	756.53	2,008.48	17,104.36	11.80	22.609	8.516	47.00	30.00
35.7	140.20	672.53	1,976.97	15,619.19	11.55	23.224	7.901	41.23	26.25
30.6	120.49	585.75	1,942.02	14,006.68	11.21	23.913	7.212	35.44	22.50
25.5	100.67	496.07	1,901.83	12,245.88	10.77	24.686	6.439	29.61	18.75
20.4	80.75	403.39	1,852.92	10,310.72	10.17	25.560	5.565	23.75	15.00
17.85	70.83	356.27	1,823.39	9,276.36	9.79	26.038	5.087	20.83	13.14
30 x 15 x 40.8	149.60	673.56	1,959.17	15,601.02	11.40	23.162	7.963	44.00	30.00
35.7	131.27	599.02	1,927.89	14,224.78	11.14	23.747	7.378	38.61	26.25
30.6	112.84	521.94	1,892.98	12,734.34	10.80	24.398	6.727	33.19	22.50
25.5	94.30	442.23	1,852.52	11,111.80	10.35	25.127	5.998	27.73	18.75
20.4	75.65	359.77	1,802.87	9,335.08	9.75	25.947	5.178	22.25	15.00
17.85	66.36	317.83	1,772.68	8,388.37	9.37	26.393	4.732	19.52	13.14
30 x 12 x 40.8	139.40	590.51	1,899.37	14,020.56	10.95	23.743	7.382	41.00	30.00
35.7	122.35	525.45	1,868.48	12,764.96	10.68	24.293	6.832	35.98	26.25
30.6	105.19	458.10	1,833.74	11,408.43	10.33	24.904	6.221	30.94	22.50
25.5	87.92	388.37	1,793.11	9,935.94	9.88	25.584	5.541	25.86	18.75
20.4	70.55	316.15	1,742.77	8,329.17	9.28	26.346	4.779	20.75	15.00
17.85	61.89	279.38	1,711.95	7,475.60	8.91	26.758	4.367	18.20	13.14
30 x 9 x 40.8	129.20	507.36	1,825.32	12,356.88	10.41	24.355	6.770	38.00	30.00
35.7	113.42	451.82	1,795.08	11,235.04	10.14	24.866	6.259	33.36	26.25
30.6	97.54	394.22	1,760.73	10,025.49	9.79	25.431	5.694	28.69	22.50
25.5	81.55	334.48	1,720.15	8,715.96	9.34	26.058	5.067	23.98	18.75
20.4	65.45	272.51	1,669.30	7,291.56	8.75	26.757	4.368	19.25	15.00
17.85	57.43	240.92	1,637.91	6,536.98	8.39	27.134	3.991	16.89	13.14
30 x 6 x 40.8	119.00	424.12	1,731.25	10,603.24	9.78	25.000	6.125	35.00	30.00
35.7	104.50	378.12	1,702.08	9,629.82	9.50	25.467	5.658	30.73	26.25
30.6	89.89	330.30	1,668.55	8,581.78	9.16	25.982	5.143	26.44	22.50
25.5	75.17	280.57	1,628.40	7,449.33	8.72	26.550	4.575	22.11	18.75
20.4	60.35	228.86	1,577.40	6,220.73	8.15	27.181	3.944	17.75	15.00
17.85	52.96	202.45	1,545.64	5,571.41	7.80	27.520	3.605	15.58	13.14
27 x 27 x 40.8	180.20	883.29	1,888.31	16,925.32	11.46	19.162	8.963	53.00	27.00
35.7	158.05	784.71	1,861.43	15,525.09	11.26	19.785	8.340	46.48	23.62
30.6	135.79	682.93	1,831.58	13,990.77	10.99	20.486	7.639	39.94	20.25



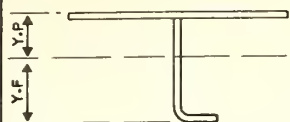
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	577.88	1,797.16	12,298.30	10.61	21.282	6.843	33.36	16.87
20.4	90.95	469.46	1,755.16	10,417.17	10.07	22.190	5.935	26.75	13.50
17.85	79.76	414.40	1,729.71	9,402.46	9.73	22.689	5.436	23.46	11.83
27 x 24 x 40.8	170.00	808.69	1,861.25	15,855.40	11.22	19.606	8.519	50.00	27.00
35.7	149.12	718.55	1,834.26	14,520.83	11.01	20.209	7.916	43.86	23.62
30.6	128.14	625.47	1,804.12	13,062.60	10.72	20.885	7.240	37.69	20.25
25.5	107.05	529.36	1,769.20	11,459.39	10.33	21.648	6.477	31.48	16.87
20.4	85.85	430.13	1,726.30	9,684.40	9.78	22.515	5.610	25.25	13.50
17.85	75.30	379.73	1,700.18	8,730.10	9.43	22.990	5.135	22.15	11.83
27 x 21 x 40.8	159.80	734.00	1,829.67	14,733.27	10.95	20.073	8.052	47.00	27.00
35.7	140.20	652.33	1,802.57	13,471.57	10.72	20.651	7.474	41.23	23.62
30.6	120.49	567.96	1,772.16	12,096.93	10.42	21.299	6.826	35.44	20.25
25.5	100.67	480.81	1,736.70	10,590.67	10.02	22.027	6.098	29.61	16.87
20.4	80.75	390.79	1,692.84	8,929.58	9.46	22.850	5.275	23.75	13.50
17.85	70.83	345.05	1,666.00	8,039.49	9.11	23.299	4.826	20.83	11.83
27 x 18 x 40.8	149.60	659.22	1,792.31	13,555.02	10.63	20.562	7.563	44.00	27.00
35.7	131.27	586.05	1,765.15	12,374.24	10.39	21.115	7.010	38.61	23.62
30.6	112.84	510.41	1,734.48	11,091.44	10.08	21.730	6.395	33.19	20.25
25.5	94.30	432.24	1,698.47	9,690.54	9.67	22.420	5.705	27.73	16.87
20.4	75.65	351.44	1,653.60	8,151.70	9.11	23.195	4.930	22.25	13.50
17.85	66.36	310.36	1,625.99	7,329.86	8.76	23.617	4.508	19.52	11.83
27 x 15 x 40.8	139.40	584.35	1,747.44	12,316.32	10.26	21.077	7.048	41.00	27.00
35.7	122.35	519.71	1,720.28	11,225.45	10.01	21.600	6.525	35.98	23.62
30.6	105.19	452.83	1,689.39	10,043.62	9.69	22.180	5.945	30.94	20.25
25.5	87.92	383.64	1,652.85	8,757.24	9.27	22.827	5.298	25.86	16.87
20.4	70.55	312.07	1,606.94	7,349.69	8.72	23.551	4.574	20.75	13.50
17.85	61.89	275.66	1,578.54	6,600.42	8.37	23.944	4.181	18.20	11.83
27 x 12 x 40.8	129.20	509.40	1,692.55	11,012.42	9.83	21.619	6.506	38.00	27.00
35.7	113.42	453.30	1,665.49	10,021.48	9.58	22.108	6.017	33.36	23.62
30.6	97.54	395.20	1,634.48	8,950.74	9.25	22.649	5.476	28.69	20.25
25.5	81.55	335.02	1,597.46	7,788.93	8.83	23.249	4.876	23.98	16.87
20.4	65.45	272.69	1,550.54	6,522.40	8.28	23.918	4.207	19.25	13.50
17.85	57.43	240.96	1,521.33	5,850.33	7.94	24.279	3.846	16.89	11.83
27 x 9 x 40.8	119.00	434.35	1,623.83	9,638.00	9.32	22.190	5.935	35.00	27.00
35.7	104.50	386.83	1,597.09	8,758.26	9.06	22.641	5.484	30.73	23.62
30.6	89.89	337.53	1,566.14	7,809.83	8.73	23.138	4.987	26.44	20.25
25.5	75.17	286.37	1,528.80	6,783.58	8.32	23.688	4.437	22.11	16.87
20.4	60.35	233.30	1,480.99	5,668.62	7.78	24.297	3.828	17.75	13.50
17.85	52.96	206.24	1,451.03	5,078.71	7.45	24.625	3.500	15.58	11.83
27 x 6 x 40.8	108.80	359.21	1,535.34	8,187.20	8.71	22.792	5.333	32.00	27.00
35.7	95.57	320.30	1,509.29	7,431.32	8.45	23.201	4.924	28.11	23.62
30.6	82.24	279.82	1,478.75	6,617.64	8.13	23.650	4.475	24.19	20.25
25.5	68.80	237.71	1,441.44	5,739.04	7.72	24.144	3.981	20.23	16.87
20.4	55.25	193.90	1,393.08	4,787.06	7.21	24.689	3.436	16.25	13.50
17.85	48.49	171.52	1,362.55	4,284.60	6.89	24.980	3.145	14.26	11.83
24 x 24 x 40.8	159.80	699.46	1,638.86	12,317.01	10.01	17.609	7.516	47.00	24.00
35.7	140.20	621.60	1,616.13	11,279.45	9.81	18.146	6.979	41.23	21.00
30.6	120.49	541.15	1,590.23	10,144.27	9.54	18.746	6.379	35.44	18.00
25.5	100.67	458.02	1,559.47	8,895.25	9.18	19.421	5.704	29.61	15.00
20.4	80.75	372.17	1,520.66	7,512.26	8.68	20.185	4.940	23.75	12.00
17.85	70.83	328.56	1,496.54	6,768.99	8.36	20.602	4.523	20.83	10.51
24 x 22 x 40.8	153.00	655.12	1,620.66	11,721.70	9.84	17.892	7.233	45.00	24.00
35.7	134.25	582.28	1,597.76	10,722.25	9.64	18.414	6.711	39.48	21.00
30.6	115.39	506.99	1,571.56	9,631.05	9.36	18.997	6.128	33.94	18.00
25.5	96.42	429.18	1,540.33	8,433.33	8.99	19.650	5.475	28.36	15.00
20.4	77.35	348.79	1,500.76	7,110.82	8.49	20.387	4.738	22.75	12.00
17.85	67.85	307.95	1,476.10	6,401.71	8.17	20.788	4.337	19.96	10.51



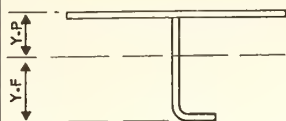
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

45.9 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	610.75	1,600.30	11,106.37	9.66	18.185	6.940	43.00	24.00
35.7	128.30	542.93	1,577.22	10,147.90	9.45	18.691	6.434	37.73	21.00
30.6	110.29	472.81	1,550.71	9,103.63	9.17	19.254	5.871	32.44	18.00
25.5	92.17	400.32	1,518.99	7,960.19	8.79	19.885	5.240	27.11	15.00
20.4	73.95	325.41	1,478.63	6,701.15	8.28	20.593	4.532	21.75	12.00
17.85	64.87	287.34	1,453.40	6,027.65	7.96	20.978	4.147	19.08	10.51
24 x 18 x 40.8	139.40	566.34	1,577.35	10,470.00	9.46	18.487	6.638	41.00	24.00
35.7	122.35	503.55	1,554.10	9,555.60	9.24	18.976	6.149	35.98	21.00
30.6	105.19	438.61	1,527.29	8,561.41	8.95	19.519	5.606	30.94	18.00
25.5	87.92	371.45	1,495.05	7,475.44	8.57	20.125	5.000	25.86	15.00
20.4	70.55	302.02	1,453.86	6,283.01	8.06	20.803	4.322	20.75	12.00
17.85	61.89	266.72	1,428.04	5,646.64	7.74	21.171	3.954	18.20	10.51
24 x 16 x 40.8	132.60	521.88	1,551.29	9,811.49	9.24	18.800	6.325	39.00	24.00
35.7	116.40	464.15	1,527.88	8,944.48	9.01	19.271	5.854	34.23	21.00
30.6	100.09	404.40	1,500.76	8,003.75	8.72	19.792	5.333	29.44	18.00
25.5	83.67	342.57	1,468.01	6,978.64	8.33	20.371	4.754	24.61	15.00
20.4	67.15	278.62	1,425.95	5,856.14	7.82	21.018	4.107	19.75	12.00
17.85	58.92	246.09	1,399.52	5,258.46	7.51	21.368	3.757	17.33	10.51
24 x 14 x 40.8	125.80	477.38	1,521.44	9,129.66	8.99	19.124	6.001	37.00	24.00
35.7	110.45	424.71	1,497.90	8,313.63	8.76	19.575	5.550	32.48	21.00
30.6	94.99	370.16	1,470.49	7,430.00	8.46	20.072	5.053	27.94	18.00
25.5	79.42	313.68	1,437.21	6,469.33	8.07	20.624	4.501	23.36	15.00
20.4	63.75	255.22	1,394.28	5,420.24	7.57	21.238	3.887	18.75	12.00
17.85	55.94	225.47	1,367.22	4,862.93	7.25	21.568	3.557	16.45	10.51
24 x 12 x 40.8	119.00	432.85	1,486.92	8,423.26	8.71	19.460	5.665	35.00	24.00
35.7	104.50	385.25	1,463.28	7,662.09	8.48	19.889	5.236	30.73	21.00
30.6	89.89	335.91	1,435.60	6,839.43	8.17	20.361	4.764	26.44	18.00
25.5	75.17	284.78	1,401.82	5,947.03	7.79	20.883	4.242	22.11	15.00
20.4	60.35	231.81	1,358.01	4,975.04	7.29	21.462	3.663	17.75	12.00
17.85	52.96	204.84	1,330.32	4,459.82	6.98	21.773	3.352	15.58	10.51
24 x 10 x 40.8	112.20	388.27	1,446.52	7,690.92	8.40	19.808	5.317	33.00	24.00
35.7	98.55	345.76	1,422.85	6,988.82	8.16	20.213	4.912	28.98	21.00
30.6	84.79	301.64	1,394.97	6,231.30	7.86	20.658	4.467	24.94	18.00
25.5	70.92	255.87	1,360.72	5,411.25	7.48	21.148	3.977	20.86	15.00
20.4	56.95	208.40	1,316.07	4,520.24	6.98	21.690	3.435	16.75	12.00
17.85	49.98	184.20	1,287.77	4,048.93	6.68	21.981	3.144	14.70	10.51
24 x 8 x 40.8	105.40	343.65	1,398.62	6,931.20	8.05	20.169	4.956	31.00	24.00
35.7	92.60	306.24	1,375.03	6,292.72	7.81	20.549	4.576	27.23	21.00
30.6	79.69	267.35	1,347.04	5,604.81	7.51	20.964	4.161	23.44	18.00
25.5	66.67	226.95	1,312.43	4,861.45	7.13	21.421	3.704	19.61	15.00
20.4	53.55	184.98	1,267.03	4,055.52	6.65	21.924	3.201	15.75	12.00
17.85	47.00	163.56	1,238.16	3,630.01	6.36	22.193	2.932	13.82	10.51
24 x 6 x 40.8	98.60	298.99	1,340.91	6,142.53	7.65	20.544	4.581	29.00	24.00
35.7	86.65	266.69	1,317.58	5,572.60	7.41	20.896	4.229	25.48	21.00
30.6	74.59	233.04	1,289.66	4,959.12	7.12	21.280	3.845	21.94	18.00
25.5	62.42	198.02	1,254.85	4,297.07	6.75	21.701	3.424	18.36	15.00
20.4	50.15	161.55	1,208.90	3,580.55	6.28	22.163	2.962	14.75	12.00
17.85	44.02	142.92	1,179.59	3,202.83	6.00	22.410	2.715	12.95	10.51
21 x 20 x 40.8	136.00	516.87	1,383.75	8,325.80	8.47	16.108	6.017	40.00	21.00
35.7	119.37	459.64	1,364.28	7,606.69	8.28	16.549	5.576	35.11	18.37
30.6	102.64	400.39	1,341.35	6,822.21	8.02	17.039	5.086	30.19	15.75
25.5	85.80	339.09	1,313.16	5,962.64	7.68	17.584	4.541	25.23	13.12
20.4	68.85	275.69	1,276.31	5,016.15	7.22	18.195	3.930	20.25	10.50
17.85	60.40	243.46	1,252.86	4,510.07	6.94	18.525	3.600	17.77	9.20
21 x 18 x 40.8	129.20	477.95	1,363.41	7,829.85	8.29	16.382	5.743	38.00	21.00
35.7	113.42	425.11	1,343.64	7,145.02	8.09	16.807	5.318	33.36	18.37
30.6	97.54	370.40	1,320.28	6,399.64	7.82	17.278	4.847	28.69	15.75



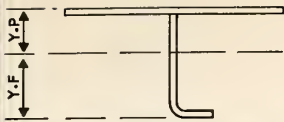
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

45.9 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	313.76	1,291.46	5,585.04	7.48	17.800	4.325	23.98	13.12
20.4	65.45	255.16	1,253.65	4,690.73	7.02	18.383	3.742	19.25	10.50
17.85	57.43	225.36	1,229.54	4,213.72	6.74	18.698	3.427	16.89	9.20
21 x 16 x 40.8	122.40	438.99	1,340.18	7,316.19	8.08	16.666	5.459	36.00	21.00
35.7	107.47	390.56	1,320.12	6,668.32	7.87	17.074	5.051	31.61	18.37
30.6	92.44	340.38	1,296.32	5,964.78	7.61	17.524	4.601	27.19	15.75
25.5	77.30	288.42	1,266.82	5,197.88	7.26	18.022	4.103	22.73	13.12
20.4	62.05	234.63	1,228.01	4,358.40	6.80	18.576	3.549	18.25	10.50
17.85	54.45	207.26	1,203.22	3,911.73	6.52	18.874	3.251	16.01	9.20
21 x 14 x 40.8	115.60	399.99	1,313.42	6,783.84	7.86	16.960	5.165	34.00	21.00
35.7	101.52	355.98	1,293.07	6,175.86	7.64	17.349	4.776	29.86	18.37
30.6	87.34	310.35	1,268.82	5,517.08	7.37	17.777	4.348	25.69	15.75
25.5	73.05	263.07	1,238.64	4,800.78	7.02	18.249	3.876	21.48	13.12
20.4	58.65	214.09	1,198.79	4,018.94	6.57	18.773	3.352	17.25	10.50
17.85	51.47	189.15	1,173.30	3,603.93	6.29	19.053	3.072	15.14	9.20
21 x 12 x 40.8	108.80	360.95	1,282.25	6,231.77	7.60	17.265	4.860	32.00	21.00
35.7	95.57	321.37	1,261.63	5,666.84	7.38	17.633	4.492	28.11	18.37
30.6	82.24	280.30	1,236.93	5,055.97	7.11	18.037	4.088	24.19	15.75
25.5	68.80	237.71	1,206.06	4,393.35	6.76	18.482	3.643	20.23	13.12
20.4	55.25	193.54	1,165.17	3,672.12	6.31	18.973	3.152	16.25	10.50
17.85	48.49	171.04	1,138.97	3,290.15	6.04	19.236	2.889	14.26	9.20
21 x 10 x 40.8	102.00	321.87	1,245.48	5,658.86	7.31	17.581	4.544	30.00	21.00
35.7	89.62	286.73	1,224.63	5,140.41	7.09	17.927	4.198	26.36	18.37
30.6	77.14	250.24	1,199.52	4,580.84	6.82	18.306	3.819	22.69	15.75
25.5	64.55	212.33	1,167.99	3,975.20	6.47	18.722	3.403	18.98	13.12
20.4	51.85	172.99	1,126.07	3,317.68	6.03	19.179	2.946	15.25	10.50
17.85	45.51	152.92	1,099.18	2,970.22	5.77	19.423	2.702	13.39	9.20
21 x 8 x 40.8	95.20	282.74	1,201.45	5,063.91	6.98	17.910	4.215	28.00	21.00
35.7	83.67	252.07	1,180.46	4,595.66	6.76	18.232	3.893	24.61	18.37
30.6	72.04	220.15	1,155.02	4,091.03	6.49	18.583	3.542	21.19	15.75
25.5	60.30	186.95	1,122.90	3,545.89	6.15	18.967	3.158	17.73	13.12
20.4	48.45	152.43	1,080.04	2,955.39	5.72	19.389	2.736	14.25	10.50
17.85	42.53	134.81	1,052.52	2,643.95	5.47	19.613	2.512	12.51	9.20
21 x 6 x 40.8	88.40	243.57	1,147.77	4,445.63	6.60	18.252	3.873	26.00	21.00
35.7	77.72	217.37	1,126.80	4,031.61	6.39	18.547	3.578	22.86	18.37
30.6	66.94	190.04	1,101.19	3,585.86	6.12	18.869	3.256	19.69	15.75
25.5	56.05	161.55	1,068.65	3,104.97	5.80	19.219	2.906	16.48	13.12
20.4	45.05	131.87	1,025.05	2,584.98	5.38	19.603	2.522	13.25	10.50
17.85	39.56	116.68	997.04	2,311.15	5.14	19.807	2.318	11.63	9.20
18 x 18 x 40.8	119.00	394.16	1,150.34	5,614.48	7.11	14.244	4.881	35.00	18.00
35.7	104.50	350.80	1,133.66	5,123.64	6.93	14.605	4.520	30.73	15.75
30.6	89.89	305.83	1,113.38	4,588.57	6.69	15.004	4.121	26.44	13.50
25.5	75.17	259.20	1,087.65	4,003.25	6.39	15.444	3.681	22.11	11.25
20.4	60.35	210.90	1,053.05	3,360.49	5.99	15.934	3.191	17.75	9.00
15.3	45.42	160.90	1,002.39	2,651.55	5.45	16.480	2.645	13.36	6.75
18 x 16 x 40.8	112.20	360.74	1,129.89	5,229.56	6.93	14.497	4.628	33.00	18.00
35.7	98.55	321.15	1,112.79	4,766.39	6.74	14.842	4.283	28.98	15.75
30.6	84.79	280.05	1,091.95	4,262.73	6.50	15.221	3.904	24.94	13.50
25.5	70.92	237.43	1,065.44	3,713.30	6.19	15.640	3.485	20.86	11.25
20.4	56.95	193.25	1,029.73	3,111.83	5.79	16.103	3.022	16.75	9.00
15.3	42.87	147.48	977.48	2,450.78	5.26	16.618	2.507	12.61	6.75
18 x 14 x 40.8	105.40	327.29	1,106.18	4,830.26	6.72	14.758	4.367	31.00	18.00
35.7	92.60	291.46	1,088.66	4,397.02	6.53	15.086	4.039	27.23	15.75
30.6	79.69	254.26	1,067.22	3,927.05	6.29	15.445	3.680	23.44	13.50
25.5	66.67	215.64	1,039.90	3,415.76	5.98	15.840	3.285	19.61	11.25
20.4	53.55	175.58	1,003.04	2,857.75	5.58	16.276	2.849	15.75	9.00
15.3	40.32	134.06	949.16	2,246.58	5.06	16.758	2.367	11.86	6.75



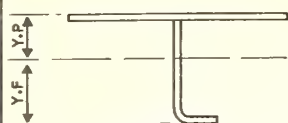
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

45.9 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	293.79	1,078.36	4,415.74	6.49	15.030	4.095	29.00	18.00
35.7	86.65	261.75	1,060.41	4,014.92	6.29	15.339	3.786	25.48	15.75
30.6	74.59	228.44	1,038.38	3,581.09	6.05	15.676	3.449	21.94	13.50
25.5	62.42	193.84	1,010.21	3,110.34	5.74	16.046	3.079	18.36	11.25
20.4	50.15	157.91	972.20	2,598.07	5.35	16.453	2.672	14.75	9.00
15.3	37.77	120.64	916.70	2,038.86	4.84	16.901	2.224	11.11	6.75
18 x 10 x 40.8	91.80	260.25	1,045.26	3,985.12	6.22	15.312	3.813	27.00	18.00
35.7	80.70	232.01	1,026.91	3,619.40	6.03	15.600	3.525	23.73	15.75
30.6	69.49	202.61	1,004.29	3,224.36	5.78	15.914	3.211	20.44	13.50
25.5	58.17	172.03	975.30	2,796.71	5.48	16.257	2.868	17.11	11.25
20.4	46.75	140.24	936.14	2,332.60	5.10	16.633	2.492	13.75	9.00
15.3	35.22	107.21	879.09	1,827.52	4.60	17.046	2.079	10.36	6.75
18 x 8 x 40.8	85.00	226.67	1,005.22	3,537.44	5.92	15.606	3.519	25.00	18.00
35.7	74.75	202.23	986.52	3,209.75	5.73	15.871	3.254	21.98	15.75
30.6	64.39	176.75	963.38	2,856.35	5.49	16.160	2.965	18.94	13.50
25.5	53.92	150.20	933.64	2,474.53	5.19	16.475	2.650	15.86	11.25
20.4	43.35	122.56	893.43	2,061.14	4.82	16.818	2.307	12.75	9.00
15.3	32.67	93.78	835.02	1,612.49	4.34	17.194	1.931	9.61	6.75
18 x 6 x 40.8	78.20	193.05	955.80	3,071.67	5.57	15.911	3.214	23.00	18.00
35.7	68.80	172.43	936.90	2,785.19	5.38	16.152	2.973	20.23	15.75
30.6	59.29	150.88	913.39	2,476.53	5.15	16.414	2.711	17.44	13.50
25.5	49.67	128.37	883.07	2,143.47	4.87	16.698	2.427	14.61	11.25
20.4	39.95	104.87	842.04	1,783.49	4.51	17.007	2.118	11.75	9.00
15.3	30.12	80.35	782.65	1,393.64	4.05	17.344	1.781	8.86	6.75



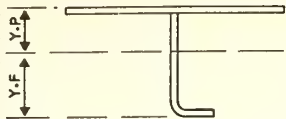
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

51.0 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,103.80	2,560.99	24,104.60	12.56	21.838	9.412	59.00	30.00
35.7	175.90	979.15	2,525.20	22,048.98	12.31	22.518	8.732	51.73	26.25
30.6	151.09	850.89	2,485.01	19,807.87	11.97	23.279	7.971	44.44	22.50
25.5	126.17	718.92	2,438.06	17,350.17	11.51	24.134	7.116	37.11	18.75
20.4	101.15	583.16	2,379.85	14,637.12	10.89	25.100	6.150	29.75	15.00
17.85	88.70	514.39	2,344.13	13,182.09	10.49	25.627	5.623	26.09	13.14
30 x 27 x 40.8	190.40	1,020.02	2,527.73	22,711.08	12.32	22.265	8.985	56.00	30.00
35.7	166.97	904.96	2,491.69	20,745.44	12.05	22.924	8.326	49.11	26.25
30.6	143.44	786.53	2,451.03	18,607.89	11.70	23.658	7.592	42.19	22.50
25.5	119.80	664.65	2,403.32	16,270.68	11.23	24.480	6.770	35.23	18.75
20.4	96.05	539.24	2,343.83	13,699.45	10.60	25.405	5.845	28.25	15.00
17.85	84.23	475.70	2,307.18	12,324.42	10.20	25.908	5.342	24.77	13.14
30 x 24 x 40.8	180.20	936.17	2,489.58	21,260.61	12.04	22.710	8.540	53.00	30.00
35.7	158.05	830.72	2,453.29	19,393.10	11.76	23.345	7.905	46.48	26.25
30.6	135.79	722.14	2,412.16	17,367.52	11.40	24.050	7.200	39.94	22.50
25.5	113.42	610.37	2,363.63	15,159.35	10.92	24.836	6.414	33.36	18.75
20.4	90.95	495.31	2,302.78	12,738.44	10.28	25.718	5.532	26.75	15.00
17.85	79.76	436.99	2,265.15	11,447.52	9.88	26.196	5.054	23.46	13.14
30 x 21 x 40.8	170.00	852.24	2,445.38	19,749.60	11.72	23.174	8.076	50.00	30.00
35.7	149.12	756.42	2,408.85	17,989.17	11.43	23.782	7.468	43.86	26.25
30.6	128.14	657.72	2,367.24	16,084.69	11.06	24.455	6.795	37.69	22.50
25.5	107.05	556.06	2,317.85	14,014.74	10.58	25.204	6.046	31.48	18.75
20.4	85.85	451.36	2,255.57	11,753.19	9.94	26.039	5.211	25.25	15.00
17.85	75.30	398.28	2,216.89	10,550.74	9.54	26.491	4.759	22.15	13.14
30 x 18 x 40.8	159.80	768.24	2,393.54	18,174.18	11.36	23.657	7.593	47.00	30.00
35.7	140.20	682.07	2,356.81	16,530.64	11.07	24.236	7.014	41.23	26.25
30.6	120.49	593.26	2,314.74	14,757.17	10.69	24.875	6.375	35.44	22.50
25.5	100.67	501.73	2,264.49	12,835.33	10.20	25.582	5.668	29.61	18.75
20.4	80.75	407.41	2,200.71	10,742.80	9.56	26.368	4.882	23.75	15.00
17.85	70.83	359.56	2,160.94	9,633.39	9.17	26.792	4.458	20.83	13.14
30 x 15 x 40.8	149.60	684.16	2,331.90	16,530.16	10.95	24.161	7.089	44.00	30.00
35.7	131.27	607.67	2,295.06	15,014.27	10.65	24.708	6.542	38.61	26.25
30.6	112.84	528.77	2,252.56	13,382.60	10.27	25.309	5.941	33.19	22.50
25.5	94.30	447.39	2,201.47	11,619.53	9.78	25.972	5.278	27.73	18.75
20.4	75.65	363.45	2,136.17	9,706.27	9.15	26.706	4.544	22.25	15.00
17.85	66.36	320.84	2,095.27	8,694.75	8.76	27.100	4.150	19.52	13.14
30 x 12 x 40.8	139.40	600.00	2,257.41	14,812.95	10.48	24.688	6.562	41.00	30.00
35.7	122.35	533.22	2,220.58	13,436.54	10.18	25.199	6.051	35.98	26.25
30.6	105.19	464.24	2,177.78	11,958.43	9.79	25.759	5.491	30.94	22.50
25.5	87.92	393.02	2,125.91	10,365.60	9.31	26.374	4.876	25.86	18.75
20.4	70.55	319.47	2,059.14	8,642.59	8.69	27.053	4.197	20.75	15.00
17.85	61.89	282.10	2,017.13	7,734.09	8.31	27.416	3.834	18.20	13.14
30 x 9 x 40.8	129.20	515.77	2,165.57	13,017.54	9.94	25.239	6.011	38.00	30.00
35.7	113.42	458.71	2,128.99	11,793.65	9.63	25.710	5.540	33.36	26.25
30.6	97.54	399.69	2,086.10	10,481.91	9.25	26.225	5.025	28.69	22.50
25.5	81.55	338.63	2,033.66	9,071.74	8.78	26.789	4.461	23.98	18.75
20.4	65.45	275.49	1,965.60	7,550.67	8.17	27.409	3.841	19.25	15.00
17.85	57.43	243.36	1,922.59	6,750.60	7.81	27.739	3.511	16.89	13.14
30 x 6 x 40.8	119.00	431.47	2,049.51	11,138.48	9.30	25.815	5.435	35.00	30.00
35.7	104.50	384.15	2,013.63	10,081.49	9.00	26.243	5.007	30.73	26.25
30.6	89.89	335.09	1,971.08	8,950.12	8.63	26.709	4.541	26.44	22.50
25.5	75.17	284.23	1,918.50	7,736.00	8.17	27.218	4.032	22.11	18.75
20.4	60.35	231.49	1,849.63	6,429.37	7.59	27.774	3.476	17.75	15.00
17.85	52.96	204.62	1,805.88	5,743.48	7.25	28.070	3.180	15.58	13.14
27 x 27 x 40.8	180.20	896.11	2,256.95	18,120.50	11.11	20.221	8.029	53.00	27.00
35.7	158.05	795.11	2,225.66	16,549.57	10.86	20.814	7.436	46.48	23.62
30.6	135.79	691.10	2,189.71	14,839.94	10.54	21.473	6.777	39.94	20.25

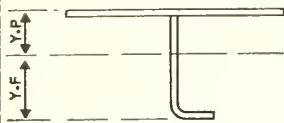


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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51.0 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	584.02	2,146.62	12,969.99	10.10	22.208	6.042	33.36	16.87
20.4	90.95	473.82	2,091.68	10,913.22	9.52	23.033	5.217	26.75	13.50
17.85	79.76	417.97	2,057.26	9,813.87	9.15	23.480	4.770	23.46	11.83
27 x 24 x 40.8	170.00	820.49	2,222.49	16,929.11	10.85	20.633	7.617	50.00	27.00
35.7	149.12	728.14	2,190.79	15,438.69	10.59	21.203	7.047	43.86	23.62
30.6	128.14	633.01	2,154.18	13,821.16	10.25	21.834	6.416	37.69	20.25
25.5	107.05	535.04	2,110.09	12,057.58	9.81	22.536	5.714	31.48	16.87
20.4	85.85	434.17	2,053.60	10,124.81	9.22	23.320	4.930	25.25	13.50
17.85	75.30	383.05	2,018.10	9,094.84	8.86	23.743	4.507	22.15	11.83
27 x 21 x 40.8	159.80	744.80	2,182.36	15,686.95	10.56	21.062	7.188	47.00	27.00
35.7	140.20	661.12	2,150.23	14,284.60	10.29	21.607	6.643	41.23	23.62
30.6	120.49	574.88	2,112.95	12,766.91	9.94	22.208	6.042	35.44	20.25
25.5	100.67	486.04	2,067.80	11,117.43	9.49	22.874	5.376	29.61	16.87
20.4	80.75	394.52	2,009.65	9,316.27	8.90	23.614	4.636	23.75	13.50
17.85	70.83	348.11	1,973.00	8,359.32	8.54	24.013	4.237	20.83	11.83
27 x 18 x 40.8	149.60	669.03	2,135.04	14,390.70	10.22	21.510	6.740	44.00	27.00
35.7	131.27	594.04	2,102.49	13,084.75	9.94	22.027	6.223	38.61	23.62
30.6	112.84	516.73	2,064.51	11,675.29	9.59	22.595	5.655	33.19	20.25
25.5	94.30	437.02	2,018.25	10,148.26	9.14	23.222	5.028	27.73	16.87
20.4	75.65	354.85	1,958.35	8,486.82	8.55	23.916	4.334	22.25	13.50
17.85	66.36	313.17	1,920.49	7,606.73	8.19	24.289	3.961	19.52	11.83
27 x 15 x 40.8	139.40	593.19	2,078.40	13,036.74	9.84	21.978	6.272	41.00	27.00
35.7	122.35	526.92	2,045.47	11,836.35	9.55	22.463	5.787	35.98	23.62
30.6	105.19	458.53	2,006.80	10,544.27	9.20	22.996	5.254	30.94	20.25
25.5	87.92	387.97	1,959.41	9,148.71	8.75	23.581	4.669	25.86	16.87
20.4	70.55	315.18	1,897.71	7,635.63	8.17	24.226	4.024	20.75	13.50
17.85	61.89	278.23	1,858.59	6,836.48	7.81	24.572	3.678	18.20	11.83
27 x 12 x 40.8	129.20	517.26	2,009.38	11,621.13	9.39	22.467	5.783	38.00	27.00
35.7	113.42	459.74	1,976.16	10,536.39	9.10	22.918	5.332	33.36	23.62
30.6	97.54	400.30	1,936.87	9,371.69	8.75	23.411	4.839	28.69	20.25
25.5	81.55	338.91	1,888.39	8,117.33	8.30	23.951	4.299	23.98	16.87
20.4	65.45	275.49	1,824.90	6,761.86	7.74	24.545	3.705	19.25	13.50
17.85	57.43	243.27	1,784.53	6,047.93	7.39	24.861	3.389	16.89	11.83
27 x 9 x 40.8	119.00	441.26	1,923.43	10,139.56	8.87	22.978	5.272	35.00	27.00
35.7	104.50	392.51	1,890.11	9,181.61	8.59	23.392	4.858	30.73	23.62
30.6	89.89	342.04	1,850.38	8,155.21	8.24	23.843	4.407	26.44	20.25
25.5	75.17	289.82	1,800.96	7,052.56	7.80	24.334	3.916	22.11	16.87
20.4	60.35	235.79	1,735.85	5,864.57	7.25	24.871	3.379	17.75	13.50
17.85	52.96	208.31	1,694.33	5,240.43	6.92	25.157	3.093	15.58	11.83
27 x 6 x 40.8	108.80	365.19	1,813.45	8,587.31	8.26	23.515	4.735	32.00	27.00
35.7	95.57	325.22	1,780.44	7,768.48	7.98	23.887	4.363	28.11	23.62
30.6	82.24	283.75	1,740.66	6,892.32	7.64	24.290	3.960	24.19	20.25
25.5	68.80	240.72	1,690.72	5,952.77	7.23	24.729	3.521	20.23	16.87
20.4	55.25	196.09	1,624.45	4,942.81	6.70	25.207	3.043	16.25	13.50
17.85	48.49	173.34	1,582.08	4,413.28	6.39	25.460	2.790	14.26	11.83
24 x 24 x 40.8	159.80	709.33	1,956.29	13,144.58	9.66	18.531	6.719	47.00	24.00
35.7	140.20	629.64	1,928.73	11,985.61	9.42	19.036	6.214	41.23	21.00
30.6	120.49	547.48	1,896.24	10,726.83	9.11	19.593	5.657	35.44	18.00
25.5	100.67	462.82	1,856.23	9,353.93	8.71	20.211	5.039	29.61	15.00
20.4	80.75	375.61	1,803.80	7,849.63	8.17	20.898	4.352	23.75	12.00
17.85	70.83	331.40	1,770.36	7,048.41	7.84	21.269	3.981	20.83	10.51
24 x 22 x 40.8	153.00	664.41	1,932.86	12,484.82	9.49	18.791	6.459	45.00	24.00
35.7	134.25	589.84	1,904.91	11,372.23	9.24	19.280	5.970	39.48	21.00
30.6	115.39	512.96	1,871.85	10,166.25	8.92	19.819	5.431	33.94	18.00
25.5	96.42	433.71	1,831.01	8,853.90	8.52	20.414	4.836	28.36	15.00
20.4	77.35	352.05	1,777.37	7,419.60	7.98	21.076	4.174	22.75	12.00
17.85	67.85	310.64	1,743.11	6,657.26	7.65	21.431	3.819	19.96	10.51



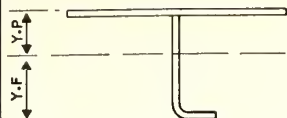
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

51.0 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	619.46	1,906.70	11,805.76	9.29	19.058	6.192	43.00	24.00
35.7	128.30	550.03	1,878.34	10,742.53	9.04	19.531	5.719	37.73	21.00
30.6	110.29	478.42	1,844.68	9,592.34	8.72	20.050	5.200	32.44	18.00
25.5	92.17	404.59	1,802.98	8,343.52	8.31	20.622	4.628	27.11	15.00
20.4	73.95	328.48	1,748.07	6,982.12	7.78	21.256	3.994	21.75	12.00
17.85	64.87	289.88	1,712.97	6,260.03	7.45	21.596	3.654	19.08	10.51
24 x 18 x 40.8	139.40	574.47	1,877.29	11,106.55	9.08	19.334	5.916	41.00	24.00
35.7	122.35	510.19	1,848.51	10,095.84	8.82	19.788	5.462	35.98	21.00
30.6	105.19	443.87	1,814.24	9,004.62	8.50	20.287	4.963	30.94	18.00
25.5	87.92	375.46	1,771.65	7,822.48	8.09	20.835	4.415	25.86	15.00
20.4	70.55	304.91	1,715.42	6,537.00	7.56	21.439	3.811	20.75	12.00
17.85	61.89	269.11	1,679.44	5,856.59	7.23	21.763	3.487	18.20	10.51
24 x 16 x 40.8	132.60	529.44	1,843.98	10,386.28	8.85	19.617	5.633	39.00	24.00
35.7	116.40	470.33	1,814.78	9,431.47	8.58	20.053	5.197	34.23	21.00
30.6	100.09	409.30	1,779.89	8,402.60	8.26	20.529	4.721	29.44	18.00
25.5	83.67	346.32	1,736.38	7,290.43	7.85	21.051	4.199	24.61	15.00
20.4	67.15	281.33	1,678.80	6,084.04	7.32	21.626	3.624	19.75	12.00
17.85	58.92	248.34	1,641.92	5,446.79	7.00	21.933	3.317	17.33	10.51
24 x 14 x 40.8	125.80	484.38	1,805.95	9,643.97	8.59	19.910	5.340	37.00	24.00
35.7	110.45	430.44	1,776.35	8,748.68	8.32	20.325	4.925	32.48	21.00
30.6	94.99	374.72	1,740.84	7,785.73	8.00	20.778	4.472	27.94	18.00
25.5	79.42	317.17	1,696.40	6,747.02	7.59	21.273	3.977	23.36	15.00
20.4	63.75	257.75	1,637.44	5,623.03	7.07	21.816	3.434	18.75	12.00
17.85	55.94	227.57	1,599.66	5,030.48	6.76	22.105	3.145	16.45	10.51
24 x 12 x 40.8	119.00	439.29	1,762.12	8,878.62	8.30	20.211	5.039	35.00	24.00
35.7	104.50	390.53	1,732.14	8,046.70	8.04	20.604	4.646	30.73	21.00
30.6	89.89	340.12	1,696.03	7,153.47	7.71	21.032	4.218	26.44	18.00
25.5	75.17	288.01	1,650.68	6,191.89	7.31	21.499	3.751	22.11	15.00
20.4	60.35	234.16	1,590.36	5,153.74	6.80	22.009	3.241	17.75	12.00
17.85	52.96	206.79	1,551.68	4,607.49	6.49	22.281	2.969	15.58	10.51
24 x 10 x 40.8	112.20	394.16	1,711.05	8,089.11	7.99	20.522	4.728	33.00	24.00
35.7	98.55	350.60	1,680.76	7,324.70	7.73	20.892	4.358	28.98	21.00
30.6	84.79	305.51	1,644.10	6,505.23	7.40	21.293	3.957	24.94	18.00
25.5	70.92	258.84	1,597.89	5,624.65	7.01	21.730	3.520	20.86	15.00
20.4	56.95	210.57	1,536.28	4,675.97	6.51	22.206	3.044	16.75	12.00
17.85	49.98	186.01	1,496.75	4,177.67	6.21	22.459	2.791	14.70	10.51
24 x 8 x 40.8	105.40	349.00	1,650.79	7,274.29	7.64	20.843	4.407	31.00	24.00
35.7	92.60	310.64	1,620.30	6,581.82	7.38	21.188	4.062	27.23	21.00
30.6	79.69	270.88	1,583.21	5,840.39	7.06	21.561	3.689	23.44	18.00
25.5	66.67	229.67	1,536.26	5,044.91	6.67	21.966	3.284	19.61	15.00
20.4	53.55	186.97	1,473.51	4,189.46	6.19	22.407	2.843	15.75	12.00
17.85	47.00	165.23	1,433.25	3,740.85	5.90	22.640	2.610	13.82	10.51
24 x 6 x 40.8	98.60	303.80	1,578.59	6,432.93	7.24	21.175	4.075	29.00	24.00
35.7	86.65	270.66	1,548.12	5,817.13	6.98	21.492	3.758	25.48	21.00
30.6	74.59	236.23	1,510.82	5,158.32	6.68	21.836	3.414	21.94	18.00
25.5	62.42	200.48	1,463.37	4,452.23	6.30	22.208	3.042	18.36	15.00
20.4	50.15	163.37	1,399.79	3,693.99	5.83	22.611	2.639	14.75	12.00
17.85	44.02	144.45	1,358.98	3,296.85	5.56	22.824	2.426	12.95	10.51
21 x 20 x 40.8	136.00	524.03	1,646.55	8,844.80	8.13	16.878	5.372	40.00	21.00
35.7	119.37	465.49	1,621.71	8,047.34	7.90	17.288	4.962	35.11	18.37
30.6	102.64	405.04	1,591.57	7,183.96	7.61	17.736	4.514	30.19	15.75
25.5	85.80	342.65	1,553.42	6,246.23	7.25	18.229	4.021	25.23	13.12
20.4	68.85	278.29	1,502.20	5,224.15	6.77	18.772	3.478	20.25	10.50
17.85	60.40	245.62	1,469.09	4,682.30	6.48	19.063	3.187	17.77	9.20
21 x 18 x 40.8	129.20	484.62	1,620.11	8,300.00	7.94	17.127	5.123	38.00	21.00
35.7	113.42	430.57	1,594.73	7,543.51	7.70	17.520	4.730	33.36	18.37
30.6	97.54	374.74	1,563.85	6,726.23	7.41	17.949	4.301	28.69	15.75



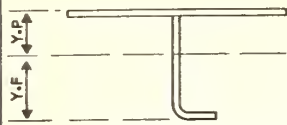
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

51.0 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	317.10	1,524.69	5,840.67	7.04	18.419	3.831	23.98	13.12
20.4	65.45	257.60	1,472.05	4,878.01	6.57	18.936	3.314	19.25	10.50
17.85	57.43	227.40	1,438.04	4,368.76	6.28	19.212	3.038	16.89	9.20
21 x 16 x 40.8	122.40	445.17	1,590.04	7,738.40	7.72	17.383	4.867	36.00	21.00
35.7	107.47	395.63	1,564.09	7,025.62	7.49	17.758	4.492	31.61	18.37
30.6	92.44	344.43	1,532.45	6,257.15	7.19	18.167	4.083	27.19	15.75
25.5	77.30	291.53	1,492.24	5,426.42	6.83	18.614	3.636	22.73	13.12
20.4	62.05	236.91	1,438.14	4,525.70	6.36	19.103	3.147	18.25	10.50
17.85	54.45	209.17	1,403.20	4,050.23	6.07	19.364	2.886	16.01	9.20
21 x 14 x 40.8	115.60	405.68	1,555.51	7,159.23	7.49	17.648	4.602	34.00	21.00
35.7	101.52	360.66	1,529.00	6,493.06	7.25	18.003	4.247	29.86	18.37
30.6	87.34	314.09	1,496.59	5,776.29	6.95	18.390	3.860	25.69	15.75
25.5	73.05	265.96	1,455.29	5,003.17	6.59	18.812	3.438	21.48	13.12
20.4	58.65	216.21	1,399.72	4,167.04	6.13	19.273	2.977	17.25	10.50
17.85	51.47	190.93	1,363.84	3,726.56	5.85	19.518	2.732	15.14	9.20
21 x 12 x 40.8	108.80	366.16	1,515.47	6,561.63	7.22	17.920	4.330	32.00	21.00
35.7	95.57	325.66	1,488.41	5,945.21	6.98	18.256	3.994	28.11	18.37
30.6	82.24	283.75	1,455.22	5,283.20	6.69	18.619	3.631	24.19	15.75
25.5	68.80	240.37	1,412.86	4,570.65	6.33	19.015	3.235	20.23	13.12
20.4	55.25	195.51	1,355.81	3,801.85	5.88	19.446	2.804	16.25	10.50
17.85	48.49	172.70	1,319.02	3,397.65	5.61	19.674	2.576	14.26	9.20
21 x 10 x 40.8	102.00	326.60	1,468.47	5,944.73	6.93	18.202	4.048	30.00	21.00
35.7	89.62	290.65	1,440.91	5,381.41	6.69	18.515	3.735	26.36	18.37
30.6	77.14	253.38	1,406.99	4,777.40	6.41	18.855	3.395	22.69	15.75
25.5	64.55	214.78	1,363.60	4,128.53	6.05	19.222	3.028	18.98	13.12
20.4	51.85	174.80	1,305.16	3,429.97	5.61	19.622	2.628	15.25	10.50
17.85	45.51	154.46	1,267.51	3,063.36	5.35	19.833	2.417	13.39	9.20
21 x 8 x 40.8	95.20	287.01	1,412.55	5,307.56	6.60	18.493	3.757	28.00	21.00
35.7	83.67	255.61	1,384.58	4,800.93	6.37	18.783	3.467	24.61	18.37
30.6	72.04	223.00	1,350.03	4,258.41	6.09	19.096	3.154	21.19	15.75
25.5	60.30	189.18	1,305.74	3,676.50	5.74	19.434	2.816	17.73	13.12
20.4	48.45	154.09	1,246.08	3,051.20	5.32	19.801	2.449	14.25	10.50
17.85	42.53	136.21	1,207.72	2,723.55	5.06	19.995	2.255	12.51	9.20
21 x 6 x 40.8	88.40	247.38	1,344.86	4,649.12	6.23	18.793	3.457	26.00	21.00
35.7	77.72	220.54	1,316.69	4,203.03	6.00	19.058	3.192	22.86	18.37
30.6	66.94	192.61	1,281.73	3,725.69	5.73	19.343	2.907	19.69	15.75
25.5	56.05	163.56	1,236.81	3,214.22	5.40	19.651	2.599	16.48	13.12
20.4	45.05	133.37	1,176.28	2,665.35	4.99	19.984	2.266	13.25	10.50
17.85	39.56	117.97	1,137.45	2,378.10	4.75	20.159	2.091	11.63	9.20
18 x 18 x 40.8	119.00	399.58	1,363.45	5,948.54	6.80	14.887	4.363	35.00	18.00
35.7	104.50	355.26	1,341.15	5,406.64	6.59	15.219	4.031	30.73	15.75
30.6	89.89	309.41	1,313.42	4,820.51	6.33	15.580	3.670	26.44	13.50
25.5	75.17	261.98	1,277.57	4,184.99	6.01	15.974	3.276	22.11	11.25
20.4	60.35	212.97	1,228.67	3,494.04	5.60	16.406	2.844	17.75	9.00
15.3	45.42	162.35	1,156.73	2,740.56	5.06	16.881	2.369	13.36	6.75
18 x 16 x 40.8	112.20	365.74	1,336.57	5,527.86	6.60	15.114	4.136	33.00	18.00
35.7	98.55	325.27	1,313.60	5,018.73	6.39	15.429	3.821	28.98	15.75
30.6	84.79	283.37	1,285.00	4,469.28	6.14	15.772	3.478	24.94	13.50
25.5	70.92	240.01	1,248.02	3,874.99	5.81	16.145	3.105	20.86	11.25
20.4	56.95	195.18	1,197.62	3,230.63	5.41	16.552	2.698	16.75	9.00
15.3	42.87	148.84	1,123.72	2,530.07	4.88	16.998	2.252	12.61	6.75
18 x 14 x 40.8	105.40	331.87	1,305.56	5,093.70	6.39	15.348	3.902	31.00	18.00
35.7	92.60	295.25	1,281.89	4,619.61	6.18	15.646	3.604	27.23	15.75
30.6	79.69	257.31	1,252.40	4,109.06	5.92	15.969	3.281	23.44	13.50
25.5	66.67	218.03	1,214.25	3,558.16	5.60	16.320	2.930	19.61	11.25
20.4	53.55	177.38	1,162.34	2,962.41	5.20	16.701	2.549	15.75	9.00
15.3	40.32	135.33	1,086.52	2,316.60	4.68	17.118	2.132	11.86	6.75



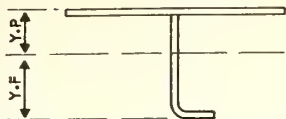
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

51.0 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	297.97	1,269.37	4,645.40	6.15	15.590	3.660	29.00	18.00
35.7	86.65	265.21	1,245.00	4,208.77	5.94	15.869	3.381	25.48	15.75
30.6	74.59	231.24	1,214.61	3,739.49	5.69	16.171	3.079	21.94	13.50
25.5	62.42	196.04	1,175.30	3,234.26	5.37	16.498	2.752	18.36	11.25
20.4	50.15	159.57	1,121.91	2,689.25	4.98	16.853	2.397	14.75	9.00
15.3	37.77	121.82	1,044.28	2,100.08	4.48	17.239	2.011	11.11	6.75
18 x 10 x 40.8	91.80	264.03	1,226.58	4,182.25	5.89	15.840	3.410	27.00	18.00
35.7	80.70	235.15	1,201.55	3,785.69	5.68	16.099	3.151	23.73	15.75
30.6	69.49	205.16	1,170.30	3,360.23	5.42	16.379	2.871	20.44	13.50
25.5	58.17	174.04	1,129.88	2,903.06	5.12	16.681	2.569	17.11	11.25
20.4	46.75	141.76	1,075.10	2,411.01	4.74	17.007	2.243	13.75	9.00
15.3	35.22	108.31	995.89	1,880.43	4.25	17.362	1.888	10.36	6.75
18 x 8 x 40.8	85.00	230.05	1,175.22	3,703.51	5.58	16.099	3.151	25.00	18.00
35.7	74.75	205.06	1,149.63	3,349.83	5.38	16.336	2.914	21.98	15.75
30.6	64.39	179.06	1,117.61	2,970.86	5.13	16.592	2.658	18.94	13.50
25.5	53.92	152.03	1,076.22	2,564.30	4.84	16.867	2.383	15.86	11.25
20.4	43.35	123.95	1,020.28	2,127.54	4.47	17.165	2.085	12.75	9.00
15.3	32.67	94.79	939.91	1,657.60	4.00	17.486	1.764	9.61	6.75
18 x 6 x 40.8	78.20	196.04	1,112.43	3,208.36	5.24	16.366	2.884	23.00	18.00
35.7	68.80	174.94	1,086.46	2,900.58	5.04	16.580	2.670	20.23	15.75
30.6	59.29	152.94	1,053.92	2,570.99	4.81	16.811	2.439	17.44	13.50
25.5	49.67	130.01	1,011.87	2,217.73	4.52	17.058	2.192	14.61	11.25
20.4	39.95	106.13	955.21	1,838.70	4.17	17.325	1.925	11.75	9.00
15.3	30.12	81.28	874.41	1,431.51	3.74	17.613	1.637	8.86	6.75



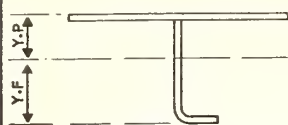
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

56.1 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,117.34	3,009.59	25,565.12	12.18	22.880	8.495	59.00	30.00
35.7	175.90	990.13	2,967.71	23,293.69	11.88	23.526	7.849	51.73	26.25
30.6	151.09	859.51	2,919.24	20,833.19	11.49	24.238	7.137	44.44	22.50
25.5	126.17	725.42	2,860.64	18,155.85	10.98	25.028	6.347	37.11	18.75
20.4	101.15	587.78	2,785.21	15,228.02	10.31	25.908	5.467	29.75	15.00
17.85	88.70	518.18	2,737.66	13,670.49	9.90	26.382	4.993	26.09	13.14
30 x 27 x 40.8	190.40	1,032.60	2,968.01	24,035.60	11.91	23.277	8.098	56.00	30.00
35.7	166.97	915.17	2,925.54	21,871.60	11.60	23.899	7.476	49.11	26.25
30.6	143.44	794.56	2,876.17	19,533.25	11.20	24.584	6.791	42.19	22.50
25.5	119.80	670.72	2,816.23	16,995.96	10.69	25.340	6.035	35.23	18.75
20.4	96.05	543.56	2,738.79	14,230.06	10.02	26.179	5.196	28.25	15.00
17.85	84.23	479.25	2,689.85	12,762.51	9.61	26.630	4.745	24.77	13.14
30 x 24 x 40.8	180.20	947.80	2,920.42	22,450.95	11.62	23.687	7.688	53.00	30.00
35.7	158.05	840.17	2,877.32	20,402.81	11.30	24.284	7.091	46.48	26.25
30.6	135.79	729.59	2,827.01	18,195.17	10.89	24.939	6.436	39.94	22.50
25.5	113.42	616.00	2,765.66	15,806.44	10.38	25.660	5.715	33.36	18.75
20.4	90.95	499.33	2,686.08	13,210.75	9.71	26.457	4.918	26.75	15.00
17.85	79.76	440.30	2,635.67	11,837.10	9.30	26.884	4.491	23.46	13.14
30 x 21 x 40.8	170.00	862.94	2,865.40	20,808.12	11.28	24.113	7.262	50.00	30.00
35.7	149.12	765.13	2,821.67	18,884.99	10.96	24.682	6.693	43.86	26.25
30.6	128.14	664.59	2,770.37	16,817.24	10.55	25.305	6.070	37.69	22.50
25.5	107.05	561.27	2,707.54	14,586.14	10.03	25.988	5.387	31.48	18.75
20.4	85.85	455.10	2,625.70	12,169.38	9.37	26.740	4.635	25.25	15.00
17.85	75.30	401.36	2,573.76	10,893.75	8.96	27.142	4.233	22.15	13.14
30 x 18 x 40.8	159.80	778.01	2,801.06	19,103.84	10.91	24.555	6.820	47.00	30.00
35.7	140.20	690.04	2,756.71	17,315.64	10.58	25.094	6.281	41.23	26.25
30.6	120.49	599.56	2,704.42	15,397.66	10.17	25.681	5.694	35.44	22.50
25.5	100.67	506.52	2,640.05	13,333.83	9.66	26.324	5.051	29.61	18.75
20.4	80.75	410.85	2,555.87	11,105.24	9.00	27.030	4.345	23.75	15.00
17.85	70.83	362.40	2,502.33	9,931.93	8.60	27.406	3.969	20.83	13.14
30 x 15 x 40.8	149.60	693.02	2,724.82	17,334.60	10.49	25.013	6.362	44.00	30.00
35.7	131.27	614.91	2,679.89	15,692.10	10.16	25.520	5.855	38.61	26.25
30.6	112.84	534.50	2,626.63	13,934.49	9.75	26.070	5.305	33.19	22.50
25.5	94.30	451.75	2,560.72	12,048.26	9.24	26.670	4.705	27.73	18.75
20.4	75.65	366.59	2,474.17	10,017.56	8.59	27.326	4.049	22.25	15.00
17.85	66.36	323.44	2,419.02	8,951.09	8.21	27.675	3.700	19.52	13.14
30 x 12 x 40.8	139.40	607.96	2,633.04	15,496.63	10.02	25.490	5.885	41.00	30.00
35.7	122.35	539.73	2,587.65	14,011.51	9.68	25.960	5.415	35.98	26.25
30.6	105.19	469.42	2,533.51	12,425.72	9.28	26.470	4.905	30.94	22.50
25.5	87.92	396.97	2,466.14	10,728.07	8.78	27.025	4.350	25.86	18.75
20.4	70.55	322.33	2,377.28	8,905.55	8.15	27.629	3.746	20.75	15.00
17.85	61.89	284.47	2,320.57	7,950.66	7.77	27.949	3.426	18.20	13.14
30 x 9 x 40.8	129.20	522.84	2,520.43	13,585.82	9.47	25.985	5.390	38.00	30.00
35.7	113.42	464.51	2,474.83	12,270.81	9.14	26.417	4.958	33.36	26.25
30.6	97.54	404.30	2,420.04	10,869.16	8.75	26.884	4.491	28.69	22.50
25.5	81.55	342.17	2,351.44	9,371.84	8.26	27.389	3.986	23.98	18.75
20.4	65.45	278.05	2,260.55	7,768.40	7.65	27.938	3.437	19.25	15.00
17.85	57.43	245.50	2,202.46	6,930.06	7.29	28.228	3.147	16.89	13.14
30 x 6 x 40.8	119.00	437.65	2,378.99	11,597.77	8.84	26.500	4.875	35.00	30.00
35.7	104.50	389.24	2,333.66	10,466.70	8.52	26.890	4.485	30.73	26.25
30.6	89.89	339.16	2,278.72	9,262.52	8.14	27.310	4.065	26.44	22.50
25.5	75.17	287.35	2,209.43	7,978.08	7.67	27.764	3.611	22.11	18.75
20.4	60.35	233.77	2,117.18	6,605.24	7.10	28.255	3.120	17.75	15.00
17.85	52.96	206.52	2,058.14	5,888.66	6.76	28.514	2.861	15.58	13.14
27 x 27 x 40.8	180.20	906.83	2,648.77	19,168.78	10.73	21.138	7.237	53.00	27.00
35.7	158.05	803.83	2,610.93	17,439.52	10.44	21.696	6.679	46.48	23.62
30.6	135.79	697.98	2,566.15	15,570.16	10.08	22.307	6.068	39.94	20.25



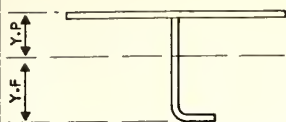
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

56.1 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	589.24	2,510.76	13,541.67	9.61	22.982	5.393	33.36	16.87
20.4	90.95	477.57	2,437.88	11,331.26	8.99	23.727	4.648	26.75	13.50
17.85	79.76	421.07	2,391.29	10,159.11	8.62	24.127	4.248	23.46	11.83
27 x 24 x 40.8	170.00	830.38	2,605.34	17,867.27	10.46	21.517	6.858	50.00	27.00
35.7	149.12	736.19	2,566.70	16,233.29	10.16	22.050	6.325	43.86	23.62
30.6	128.14	639.37	2,520.79	14,471.61	9.79	22.634	5.741	37.69	20.25
25.5	107.05	539.88	2,463.80	12,565.61	9.31	23.275	5.100	31.48	16.87
20.4	85.85	437.66	2,388.60	10,495.53	8.70	23.981	4.394	25.25	13.50
17.85	75.30	385.94	2,340.46	9,400.76	8.33	24.358	4.017	22.15	11.83
27 x 21 x 40.8	159.80	753.86	2,554.91	16,517.09	10.15	21.910	6.465	47.00	27.00
35.7	140.20	668.51	2,515.43	14,986.12	9.84	22.417	5.958	41.23	23.62
30.6	120.49	580.74	2,468.33	13,339.85	9.47	22.971	5.404	35.44	20.25
25.5	100.67	490.50	2,409.64	11,563.95	8.99	23.576	4.799	29.61	16.87
20.4	80.75	397.74	2,331.99	9,641.52	8.38	24.241	4.134	23.75	13.50
17.85	70.83	350.79	2,282.23	8,627.57	8.02	24.595	3.780	20.83	11.83
27 x 18 x 40.8	149.60	677.27	2,495.62	15,115.44	9.80	22.318	6.057	44.00	27.00
35.7	131.27	600.78	2,455.29	13,695.89	9.49	22.797	5.578	38.61	23.62
30.6	112.84	522.07	2,406.95	12,173.35	9.11	23.317	5.058	33.19	20.25
25.5	94.30	441.10	2,346.49	10,535.68	8.64	23.885	4.490	27.73	16.87
20.4	75.65	357.82	2,266.28	8,768.62	8.04	24.506	3.869	22.25	13.50
17.85	66.36	315.64	2,214.84	7,839.08	7.68	24.836	3.539	19.52	11.83
27 x 15 x 40.8	139.40	600.62	2,424.94	13,659.34	9.41	22.742	5.633	41.00	27.00
35.7	122.35	533.01	2,383.76	12,360.31	9.10	23.190	5.185	35.98	23.62
30.6	105.19	463.38	2,334.17	10,970.49	8.72	23.675	4.700	30.94	20.25
25.5	87.92	391.68	2,271.91	9,479.72	8.25	24.202	4.173	25.86	16.87
20.4	70.55	317.88	2,189.08	7,876.20	7.66	24.777	3.598	20.75	13.50
17.85	61.89	280.48	2,135.94	7,034.85	7.31	25.081	3.294	18.20	11.83
27 x 12 x 40.8	129.20	523.90	2,339.22	12,145.54	8.96	23.183	5.192	38.00	27.00
35.7	113.42	465.19	2,297.27	10,976.97	8.65	23.597	4.778	33.36	23.62
30.6	97.54	404.65	2,246.49	9,729.53	8.28	24.044	4.331	28.69	20.25
25.5	81.55	342.25	2,182.46	8,394.94	7.82	24.528	3.847	23.98	16.87
20.4	65.45	277.94	2,097.09	6,963.60	7.25	25.054	3.321	19.25	13.50
17.85	57.43	245.32	2,042.31	6,214.41	6.91	25.332	3.043	16.89	11.83
27 x 9 x 40.8	119.00	447.12	2,233.10	10,570.55	8.44	23.641	4.734	35.00	27.00
35.7	104.50	397.33	2,190.58	9,543.24	8.14	24.019	4.356	30.73	23.62
30.6	89.89	345.90	2,138.82	8,448.64	7.77	24.425	3.950	26.44	20.25
25.5	75.17	292.80	2,073.24	7,280.14	7.33	24.864	3.511	22.11	16.87
20.4	60.35	237.99	1,985.61	6,030.13	6.78	25.338	3.037	17.75	13.50
17.85	52.96	210.15	1,929.42	5,377.24	6.46	25.588	2.787	15.58	11.83
27 x 6 x 40.8	108.80	370.27	2,098.30	8,930.58	7.84	24.119	4.256	32.00	27.00
35.7	95.57	329.42	2,055.68	8,056.32	7.55	24.456	3.919	28.11	23.62
30.6	82.24	287.12	2,003.42	7,125.87	7.20	24.818	3.557	24.19	20.25
25.5	68.80	243.34	1,936.87	6,134.06	6.78	25.208	3.167	20.23	16.87
20.4	55.25	198.03	1,847.73	5,075.06	6.26	25.628	2.747	16.25	13.50
17.85	48.49	174.97	1,790.62	4,522.84	5.95	25.849	2.526	14.26	11.83
24 x 24 x 40.8	159.80	717.67	2,290.71	13,866.54	9.30	19.322	6.053	47.00	24.00
35.7	140.20	636.44	2,256.14	12,596.40	9.03	19.792	5.583	41.23	21.00
30.6	120.49	552.88	2,214.30	11,226.35	8.68	20.305	5.070	35.44	18.00
25.5	100.67	466.96	2,161.41	9,743.93	8.25	20.867	4.508	29.61	15.00
20.4	80.75	378.63	2,090.52	8,134.43	7.70	21.484	3.891	23.75	12.00
17.85	70.83	333.92	2,044.71	7,283.70	7.37	21.813	3.562	20.83	10.51
24 x 22 x 40.8	153.00	672.26	2,260.92	13,148.92	9.11	19.559	5.816	45.00	24.00
35.7	134.25	596.26	2,225.68	11,933.25	8.83	20.013	5.362	39.48	21.00
30.6	115.39	518.06	2,182.93	10,624.40	8.49	20.508	4.867	33.94	18.00
25.5	96.42	437.62	2,128.81	9,211.13	8.06	21.048	4.327	28.36	15.00
20.4	77.35	354.91	2,056.20	7,680.22	7.51	21.640	3.735	22.75	12.00
17.85	67.85	313.03	2,009.30	6,872.53	7.18	21.955	3.420	19.96	10.51



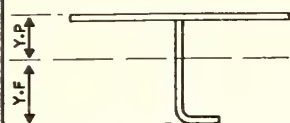
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

56.1 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	626.82	2,227.73	12,412.95	8.91	19.803	5.572	43.00	24.00
35.7	128.30	556.06	2,191.79	11,254.75	8.63	20.240	5.135	37.73	21.00
30.6	110.29	483.23	2,148.10	10,010.08	8.28	20.715	4.660	32.44	18.00
25.5	92.17	408.28	2,092.70	8,668.85	7.85	21.233	4.142	27.11	15.00
20.4	73.95	331.19	2,018.32	7,219.29	7.31	21.798	3.577	21.75	12.00
17.85	64.87	292.15	1,970.28	6,455.93	6.98	22.098	3.277	19.08	10.51
24 x 18 x 40.8	139.40	581.35	2,190.53	11,657.92	8.69	20.053	5.322	41.00	24.00
35.7	122.35	515.84	2,153.87	10,560.35	8.41	20.472	4.903	35.98	21.00
30.6	105.19	448.38	2,109.21	9,382.98	8.06	20.926	4.449	30.94	18.00
25.5	87.92	378.93	2,052.49	8,116.84	7.63	21.420	3.955	25.86	15.00
20.4	70.55	307.46	1,976.28	6,751.49	7.09	21.959	3.416	20.75	12.00
17.85	61.89	271.25	1,927.10	6,033.77	6.77	22.244	3.131	18.20	10.51
24 x 16 x 40.8	132.60	535.86	2,148.53	10,883.08	8.45	20.310	5.065	39.00	24.00
35.7	116.40	475.60	2,111.14	9,849.49	8.17	20.710	4.665	34.23	21.00
30.6	100.09	413.52	2,065.49	8,742.72	7.82	21.142	4.233	29.44	18.00
25.5	83.67	349.57	2,007.42	7,554.83	7.40	21.612	3.763	24.61	15.00
20.4	67.15	283.73	1,929.37	6,276.66	6.87	22.122	3.253	19.75	12.00
17.85	58.92	250.36	1,879.04	5,605.96	6.55	22.392	2.983	17.33	10.51
24 x 14 x 40.8	125.80	490.33	2,100.74	10,087.63	8.19	20.573	4.802	37.00	24.00
35.7	110.45	435.34	2,062.63	9,121.59	7.91	20.953	4.422	32.48	21.00
30.6	94.99	378.65	2,015.99	8,088.86	7.57	21.363	4.012	27.94	18.00
25.5	79.42	320.21	1,956.56	6,982.54	7.15	21.806	3.569	23.36	15.00
20.4	63.75	260.00	1,876.68	5,794.64	6.62	22.287	3.088	18.75	12.00
17.85	55.94	229.46	1,825.22	5,172.38	6.31	22.541	2.834	16.45	10.51
24 x 12 x 40.8	119.00	444.78	2,045.88	9,270.75	7.90	20.844	4.531	35.00	24.00
35.7	104.50	395.06	2,007.08	8,376.00	7.62	21.202	4.173	30.73	21.00
30.6	89.89	343.76	1,959.47	7,420.98	7.28	21.588	3.787	26.44	18.00
25.5	75.17	290.84	1,898.73	6,399.70	6.87	22.004	3.371	22.11	15.00
20.4	60.35	236.26	1,817.08	5,305.28	6.36	22.455	2.920	17.75	12.00
17.85	52.96	208.56	1,764.54	4,732.91	6.06	22.693	2.682	15.58	10.51
24 x 10 x 40.8	112.20	399.19	1,982.26	8,431.55	7.59	21.121	4.254	33.00	24.00
35.7	98.55	354.76	1,942.85	7,612.10	7.31	21.457	3.918	28.98	21.00
30.6	84.79	308.86	1,894.35	6,738.62	6.98	21.818	3.557	24.94	18.00
25.5	70.92	261.46	1,832.38	5,806.00	6.58	22.206	3.169	20.86	15.00
20.4	56.95	212.52	1,749.10	4,808.39	6.08	22.626	2.749	16.75	12.00
17.85	49.98	187.66	1,695.61	4,287.43	5.79	22.846	2.529	14.70	10.51
24 x 8 x 40.8	105.40	353.58	1,907.59	7,569.12	7.24	21.407	3.968	31.00	24.00
35.7	92.60	314.44	1,867.70	6,829.18	6.97	21.719	3.656	27.23	21.00
30.6	79.69	273.95	1,818.48	6,041.30	6.64	22.053	3.322	23.44	18.00
25.5	66.67	232.07	1,755.49	5,201.15	6.25	22.412	2.963	19.61	15.00
20.4	53.55	188.77	1,670.86	4,303.81	5.77	22.799	2.576	15.75	12.00
17.85	47.00	166.76	1,616.61	3,835.82	5.49	23.002	2.373	13.82	10.51
24 x 6 x 40.8	98.60	307.94	1,818.73	6,682.46	6.85	21.701	3.674	29.00	24.00
35.7	86.65	274.10	1,778.63	6,026.54	6.59	21.987	3.388	25.48	21.00
30.6	74.59	239.02	1,728.97	5,328.53	6.27	22.293	3.082	21.94	18.00
25.5	62.42	202.67	1,665.31	4,584.82	5.90	22.622	2.753	18.36	15.00
20.4	50.15	165.02	1,579.83	3,791.35	5.44	22.975	2.400	14.75	12.00
17.85	44.02	145.85	1,525.18	3,377.94	5.17	23.160	2.215	12.95	10.51
21 x 20 x 40.8	136.00	530.17	1,919.52	9,295.27	7.78	17.533	4.842	40.00	21.00
35.7	119.37	470.55	1,887.11	8,427.20	7.53	17.909	4.466	35.11	18.37
30.6	102.64	409.10	1,847.02	7,493.78	7.22	18.318	4.057	30.19	15.75
25.5	85.80	345.80	1,795.43	6,487.78	6.84	18.762	3.613	25.23	13.12
20.4	68.85	280.63	1,725.36	5,400.76	6.36	19.245	3.130	20.25	10.50
17.85	60.40	247.61	1,679.90	4,828.57	6.07	19.501	2.874	17.77	9.20
21 x 18 x 40.8	129.20	490.34	1,885.71	8,707.23	7.58	17.758	4.617	38.00	21.00
35.7	113.42	435.29	1,852.46	7,886.50	7.33	18.118	4.257	33.36	18.37
30.6	97.54	378.54	1,811.29	7,005.70	7.02	18.507	3.868	28.69	15.75



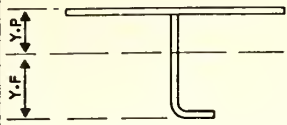
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

56.1 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	320.05	1,758.29	6,058.41	6.64	18.929	3.446	23.98	13.12
20.4	65.45	259.81	1,686.37	5,037.22	6.16	19.388	2.987	19.25	10.50
17.85	57.43	229.27	1,639.78	4,500.69	5.88	19.630	2.745	16.89	9.20
21 x 16 x 40.8	122.40	450.48	1,847.38	8,103.45	7.36	17.989	4.386	36.00	21.00
35.7	107.47	400.02	1,813.26	7,332.76	7.11	18.331	4.044	31.61	18.37
30.6	92.44	347.97	1,770.99	6,507.20	6.80	18.701	3.674	27.19	15.75
25.5	77.30	294.30	1,716.54	5,621.15	6.43	19.100	3.275	22.73	13.12
20.4	62.05	238.98	1,642.76	4,668.15	5.95	19.533	2.842	18.25	10.50
17.85	54.45	210.93	1,595.06	4,168.36	5.68	19.762	2.613	16.01	9.20
21 x 14 x 40.8	115.60	410.59	1,803.56	7,483.28	7.13	18.226	4.149	34.00	21.00
35.7	101.52	364.72	1,768.58	6,765.49	6.87	18.550	3.825	29.86	18.37
30.6	87.34	317.38	1,725.18	5,997.95	6.57	18.898	3.477	25.69	15.75
25.5	73.05	268.53	1,669.30	5,175.80	6.19	19.274	3.101	21.48	13.12
20.4	58.65	218.15	1,593.67	4,293.44	5.73	19.681	2.694	17.25	10.50
17.85	51.47	192.59	1,544.90	3,831.51	5.46	19.895	2.480	15.14	9.20
21 x 12 x 40.8	108.80	370.67	1,753.00	6,846.06	6.86	18.470	3.905	32.00	21.00
35.7	95.57	329.41	1,717.17	6,184.19	6.61	18.774	3.601	28.11	18.37
30.6	82.24	286.78	1,672.67	5,477.60	6.31	19.100	3.275	24.19	15.75
25.5	68.80	242.76	1,615.38	4,722.11	5.94	19.452	2.923	20.23	13.12
20.4	55.25	197.32	1,538.00	3,912.94	5.49	19.831	2.544	16.25	10.50
17.85	48.49	174.24	1,488.23	3,490.03	5.23	20.030	2.345	14.26	9.20
21 x 10 x 40.8	102.00	330.71	1,693.99	6,191.07	6.57	18.720	3.655	30.00	21.00
35.7	89.62	294.07	1,657.38	5,588.34	6.32	19.003	3.372	26.36	18.37
30.6	77.14	256.17	1,611.86	4,945.78	6.03	19.307	3.068	22.69	15.75
25.5	64.55	216.98	1,553.28	4,259.86	5.67	19.633	2.742	18.98	13.12
20.4	51.85	176.48	1,474.32	3,526.53	5.24	19.983	2.392	15.25	10.50
17.85	45.51	155.89	1,423.70	3,143.84	4.98	20.167	2.208	13.39	9.20
21 x 8 x 40.8	95.20	290.73	1,624.24	5,517.56	6.25	18.978	3.397	28.00	21.00
35.7	83.67	258.72	1,586.99	4,977.38	6.01	19.239	3.136	24.61	18.37
30.6	72.04	225.55	1,540.62	4,402.11	5.72	19.518	2.857	21.19	15.75
25.5	60.30	191.19	1,480.96	3,788.79	5.38	19.817	2.558	17.73	13.12
20.4	48.45	155.63	1,400.77	3,134.07	4.96	20.138	2.237	14.25	10.50
17.85	42.53	137.54	1,349.56	2,792.82	4.71	20.306	2.069	12.51	9.20
21 x 6 x 40.8	88.40	250.72	1,540.51	4,824.72	5.88	19.243	3.132	26.00	21.00
35.7	77.72	223.34	1,502.89	4,350.73	5.65	19.480	2.895	22.86	18.37
30.6	66.94	194.91	1,456.00	3,846.19	5.38	19.733	2.642	19.69	15.75
25.5	56.05	165.40	1,395.69	3,308.66	5.05	20.004	2.371	16.48	13.12
20.4	45.05	134.78	1,314.87	2,735.41	4.65	20.295	2.080	13.25	10.50
17.85	39.56	119.19	1,263.49	2,436.89	4.41	20.446	1.929	11.63	9.20
18 x 18 x 40.8	119.00	404.31	1,581.29	6,238.46	6.48	15.430	3.945	35.00	18.00
35.7	104.50	359.20	1,551.29	5,651.02	6.26	15.732	3.643	30.73	15.75
30.6	89.89	312.61	1,513.59	5,019.97	5.99	16.058	3.317	26.44	13.50
25.5	75.17	264.51	1,464.51	4,340.89	5.66	16.411	2.964	22.11	11.25
20.4	60.35	214.90	1,397.50	3,608.74	5.25	16.793	2.582	17.75	9.00
15.3	45.42	163.75	1,299.71	2,817.67	4.71	17.207	2.168	13.36	6.75
18 x 16 x 40.8	112.20	370.12	1,546.67	5,786.41	6.29	15.634	3.741	33.00	18.00
35.7	98.55	328.92	1,515.71	5,236.50	6.06	15.920	3.455	28.98	15.75
30.6	84.79	286.35	1,476.84	4,646.94	5.80	16.228	3.147	24.94	13.50
25.5	70.92	242.37	1,426.31	4,013.89	5.47	16.561	2.814	20.86	11.25
20.4	56.95	196.98	1,357.52	3,332.95	5.06	16.920	2.455	16.75	9.00
15.3	42.87	150.17	1,257.66	2,599.12	4.54	17.308	2.067	12.61	6.75
18 x 14 x 40.8	105.40	335.90	1,506.92	5,321.83	6.07	15.843	3.532	31.00	18.00
35.7	92.60	298.62	1,475.00	4,811.67	5.85	16.113	3.262	27.23	15.75
30.6	79.69	260.07	1,434.94	4,265.74	5.58	16.402	2.973	23.44	13.50
25.5	66.67	220.22	1,382.97	3,680.74	5.26	16.714	2.661	19.61	11.25
20.4	53.55	179.07	1,312.45	3,052.90	4.86	17.049	2.326	15.75	9.00
15.3	40.32	136.58	1,210.70	2,377.95	4.36	17.411	1.964	11.86	6.75



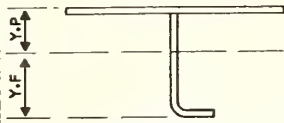
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	301.65	1,460.82	4,844.21	5.83	16.059	3.316	29.00	18.00
35.7	86.65	268.30	1,427.95	4,376.13	5.61	16.310	3.065	25.48	15.75
30.6	74.59	233.78	1,386.73	3,876.09	5.35	16.580	2.795	21.94	13.50
25.5	62.42	198.07	1,333.37	3,341.26	5.04	16.869	2.506	18.36	11.25
20.4	50.15	161.15	1,261.26	2,768.47	4.65	17.180	2.195	14.75	9.00
15.3	37.77	122.99	1,157.90	2,154.12	4.16	17.515	1.860	11.11	6.75
18 x 10 x 40.8	91.80	267.37	1,406.70	4,352.99	5.57	16.281	3.094	27.00	18.00
35.7	80.70	237.96	1,372.95	3,929.49	5.35	16.513	2.862	23.73	15.75
30.6	69.49	207.48	1,330.67	3,477.71	5.10	16.761	2.614	20.44	13.50
25.5	58.17	175.91	1,276.06	2,995.29	4.79	17.028	2.347	17.11	11.25
20.4	46.75	143.22	1,202.59	2,479.57	4.42	17.313	2.062	13.75	9.00
15.3	35.22	109.40	1,098.11	1,927.57	3.95	17.620	1.755	10.36	6.75
18 x 8 x 40.8	85.00	233.07	1,342.29	3,847.58	5.27	16.509	2.866	25.00	18.00
35.7	74.75	207.60	1,307.81	3,471.30	5.06	16.721	2.654	21.98	15.75
30.6	64.39	181.17	1,264.66	3,070.30	4.82	16.947	2.428	18.94	13.50
25.5	53.92	153.74	1,209.07	2,642.62	4.52	17.189	2.186	15.86	11.25
20.4	43.35	125.29	1,134.69	2,186.09	4.16	17.448	1.927	12.75	9.00
15.3	32.67	95.81	1,029.83	1,698.26	3.72	17.726	1.649	9.61	6.75
18 x 6 x 40.8	78.20	198.73	1,264.34	3,327.34	4.94	16.743	2.632	23.00	18.00
35.7	68.80	177.22	1,229.43	3,001.11	4.74	16.934	2.441	20.23	15.75
30.6	59.29	154.84	1,185.80	2,653.55	4.50	17.137	2.238	17.44	13.50
25.5	49.67	131.56	1,129.75	2,283.07	4.22	17.354	2.021	14.61	11.25
20.4	39.95	107.35	1,055.19	1,887.92	3.88	17.586	1.789	11.75	9.00
15.3	30.12	82.21	951.12	1,466.14	3.46	17.834	1.541	8.86	6.75



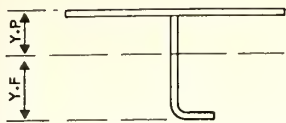
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,128.88	3,485.19	26,859.74	11.77	23.793	7.707	59.00	30.00
35.7	175.90	999.52	3,434.68	24,387.83	11.43	24.400	7.100	51.73	26.25
30.6	151.09	866.92	3,374.66	21,726.69	11.00	25.062	6.438	44.44	22.50
25.5	126.17	731.05	3,300.10	18,851.90	10.47	25.787	5.713	37.11	18.75
20.4	101.15	591.84	3,201.61	15,734.46	9.77	26.585	4.915	29.75	15.00
17.85	88.70	521.55	3,138.47	14,087.74	9.35	27.011	4.489	26.09	13.14
30 x 27 x 40.8	190.40	1,043.35	3,433.64	25,206.21	11.49	24.159	7.341	56.00	30.00
35.7	166.97	923.92	3,382.10	22,858.95	11.14	24.741	6.759	49.11	26.25
30.6	143.44	801.49	3,320.64	20,337.93	10.71	25.375	6.125	42.19	22.50
25.5	119.80	675.98	3,244.08	17,621.61	10.17	26.068	5.432	35.23	18.75
20.4	96.05	547.37	3,142.71	14,684.53	9.48	26.827	4.673	28.25	15.00
17.85	84.23	482.41	3,077.68	13,136.73	9.07	27.232	4.268	24.77	13.14
30 x 24 x 40.8	180.20	957.75	3,374.76	23,499.92	11.18	24.537	6.963	53.00	30.00
35.7	158.05	848.29	3,322.13	21,285.85	10.83	25.093	6.407	46.48	26.25
30.6	135.79	736.02	3,259.17	18,913.46	10.40	25.697	5.803	39.94	22.50
25.5	113.42	620.91	3,180.49	16,363.91	9.86	26.355	5.145	33.36	18.75
20.4	90.95	502.89	3,076.10	13,615.13	9.17	27.074	4.426	26.75	15.00
17.85	79.76	443.26	3,009.10	12,169.96	8.76	27.456	4.044	23.46	13.14
30 x 21 x 40.8	170.00	872.10	3,306.88	21,738.29	10.84	24.926	6.574	50.00	30.00
35.7	149.12	772.61	3,253.13	19,666.58	10.49	25.455	6.045	43.86	26.25
30.6	128.14	670.54	3,188.59	17,451.86	10.05	26.027	5.473	37.69	22.50
25.5	107.05	565.81	3,107.69	15,077.89	9.52	26.648	4.852	31.48	18.75
20.4	85.85	458.40	3,000.16	12,525.72	8.84	27.325	4.175	25.25	15.00
17.85	75.30	404.11	2,931.11	11,187.02	8.44	27.683	3.817	22.15	13.14
30 x 18 x 40.8	159.80	786.40	3,227.77	19,918.59	10.46	25.329	6.171	47.00	30.00
35.7	140.20	696.90	3,172.87	17,999.07	10.11	25.827	5.673	41.23	26.25
30.6	120.49	605.02	3,106.71	15,951.68	9.67	26.365	5.135	35.44	22.50
25.5	100.67	510.71	3,023.54	13,762.58	9.14	26.948	4.552	29.61	18.75
20.4	80.75	413.90	2,912.77	11,415.72	8.48	27.581	3.919	23.75	15.00
17.85	70.83	364.95	2,841.65	10,187.50	8.09	27.915	3.585	20.83	13.14
30 x 15 x 40.8	149.60	700.63	3,134.36	18,037.91	10.04	25.745	5.755	44.00	30.00
35.7	131.27	621.15	3,078.36	16,281.15	9.68	26.211	5.289	38.61	26.25
30.6	112.84	539.49	3,010.59	14,411.37	9.26	26.713	4.787	33.19	22.50
25.5	94.30	455.58	2,925.13	12,416.95	8.74	27.255	4.245	27.73	18.75
20.4	75.65	369.40	2,811.15	10,284.54	8.09	27.842	3.658	22.25	15.00
17.85	66.36	325.78	2,737.99	9,170.99	7.70	28.150	3.350	19.52	13.14
30 x 12 x 40.8	139.40	614.82	3,022.43	16,093.13	9.56	26.175	5.325	41.00	30.00
35.7	122.35	545.37	2,965.42	14,510.48	9.21	26.607	4.893	35.98	26.25
30.6	105.19	473.93	2,896.15	12,829.28	8.79	27.070	4.430	30.94	22.50
25.5	87.92	400.45	2,808.52	11,039.96	8.28	27.569	3.931	25.86	18.75
20.4	70.55	324.88	2,691.49	9,131.57	7.66	28.107	3.393	20.75	15.00
17.85	61.89	286.62	2,616.43	8,137.04	7.29	28.390	3.110	18.20	13.14
30 x 9 x 40.8	129.20	528.95	2,885.82	14,080.90	9.02	26.621	4.879	38.00	30.00
35.7	113.42	469.54	2,828.10	12,684.60	8.68	27.015	4.485	33.36	26.25
30.6	97.54	408.34	2,757.62	11,203.71	8.27	27.437	4.063	28.69	22.50
25.5	81.55	345.30	2,668.15	9,630.49	7.78	27.891	3.609	23.98	18.75
20.4	65.45	280.36	2,548.54	7,956.18	7.18	28.378	3.122	19.25	15.00
17.85	57.43	247.44	2,471.92	7,085.20	6.83	28.634	2.866	16.89	13.14
30 x 6 x 40.8	119.00	443.02	2,715.40	11,997.66	8.40	27.082	4.418	35.00	30.00
35.7	104.50	393.68	2,657.53	10,800.89	8.07	27.436	4.064	30.73	26.25
30.6	89.89	342.73	2,586.47	9,532.82	7.68	27.814	3.686	26.44	22.50
25.5	75.17	290.13	2,495.93	8,187.37	7.22	28.220	3.280	22.11	18.75
20.4	60.35	235.84	2,374.76	6,757.71	6.65	28.654	2.846	17.75	15.00
17.85	52.96	208.26	2,297.28	6,015.00	6.32	28.882	2.618	15.58	13.14
27 x 27 x 40.8	180.20	916.06	3,061.05	20,094.26	10.34	21.936	6.564	53.00	27.00
35.7	158.05	811.37	3,014.07	18,219.38	10.02	22.455	6.045	46.48	23.62
30.6	135.79	703.97	2,957.17	16,205.31	9.62	23.020	5.480	39.94	20.25



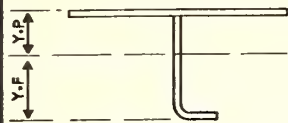
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

61.2 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	593.83	2,885.23	14,035.43	9.13	23.635	4.865	33.36	16.87
20.4	90.95	480.92	2,788.75	11,690.26	8.50	24.308	4.192	26.75	13.50
17.85	79.76	423.88	2,726.41	10,455.09	8.12	24.665	3.835	23.46	11.83
27 x 24 x 40.8	170.00	838.90	3,006.84	18,693.21	10.05	22.283	6.217	50.00	27.00
35.7	149.12	743.16	2,958.59	16,927.99	9.73	22.778	5.722	43.86	23.62
30.6	128.14	644.92	2,900.00	15,036.38	9.33	23.315	5.185	37.69	20.25
25.5	107.05	544.14	2,825.77	13,003.96	8.84	23.898	4.602	31.48	16.87
20.4	85.85	440.79	2,726.14	10,813.92	8.21	24.533	3.967	25.25	13.50
17.85	75.30	388.55	2,661.80	9,663.23	7.84	24.870	3.630	22.15	11.83
27 x 21 x 40.8	159.80	761.68	2,944.09	17,245.99	9.73	22.642	5.858	47.00	27.00
35.7	140.20	674.92	2,894.51	15,598.13	9.41	23.111	5.389	41.23	23.62
30.6	120.49	585.85	2,834.14	13,836.59	9.01	23.618	4.882	35.44	20.25
25.5	100.67	494.44	2,757.51	11,948.99	8.52	24.167	4.333	29.61	16.87
20.4	80.75	400.64	2,654.59	9,921.02	7.91	24.763	3.737	23.75	13.50
17.85	70.83	353.23	2,588.19	8,858.02	7.54	25.078	3.422	20.83	11.83
27 x 18 x 40.8	149.60	684.40	2,870.61	15,750.26	9.38	23.013	5.487	44.00	27.00
35.7	131.27	606.64	2,819.65	14,228.07	9.05	23.454	5.046	38.61	23.62
30.6	112.84	526.76	2,757.43	12,604.71	8.66	23.929	4.571	33.19	20.25
25.5	94.30	444.72	2,678.32	10,869.72	8.17	24.442	4.058	27.73	16.87
20.4	75.65	360.49	2,572.04	9,011.08	7.57	24.997	3.503	22.25	13.50
17.85	66.36	317.89	2,503.55	8,039.11	7.21	25.289	3.211	19.52	11.83
27 x 15 x 40.8	139.40	607.07	2,783.38	14,203.55	8.98	23.397	5.103	41.00	27.00
35.7	122.35	538.32	2,731.04	12,815.94	8.66	23.807	4.693	35.98	23.62
30.6	105.19	467.64	2,666.97	11,339.42	8.27	24.248	4.252	30.94	20.25
25.5	87.92	394.99	2,585.35	9,765.28	7.79	24.723	3.777	25.86	16.87
20.4	70.55	320.34	2,475.73	8,083.62	7.20	25.235	3.265	20.75	13.50
17.85	61.89	282.55	2,405.20	7,206.16	6.86	25.504	2.996	18.20	11.83
27 x 12 x 40.8	129.20	529.68	2,678.16	12,603.21	8.54	23.794	4.706	38.00	27.00
35.7	113.42	469.96	2,624.53	11,359.78	8.21	24.172	4.328	33.36	23.62
30.6	97.54	408.50	2,558.68	10,039.34	7.83	24.576	3.924	28.69	20.25
25.5	81.55	345.24	2,474.67	8,634.80	7.37	25.011	3.489	23.98	16.87
20.4	65.45	280.17	2,361.91	7,138.11	6.80	25.478	3.022	19.25	13.50
17.85	57.43	247.21	2,289.53	6,358.79	6.47	25.723	2.777	16.89	11.83
27 x 9 x 40.8	119.00	452.23	2,548.72	10,946.39	8.02	24.205	4.295	35.00	27.00
35.7	104.50	401.57	2,494.06	9,857.50	7.71	24.548	3.952	30.73	23.62
30.6	89.89	349.33	2,426.71	8,703.03	7.34	24.914	3.586	26.44	20.25
25.5	75.17	295.48	2,340.68	7,477.34	6.90	25.305	3.195	22.11	16.87
20.4	60.35	240.00	2,225.32	6,174.04	6.36	25.726	2.774	17.75	13.50
17.85	52.96	211.86	2,151.52	5,496.64	6.04	25.945	2.555	15.58	11.83
27 x 6 x 40.8	108.80	374.73	2,385.64	9,230.05	7.43	24.631	3.869	32.00	27.00
35.7	95.57	333.13	2,330.52	8,306.87	7.14	24.936	3.564	28.11	23.62
30.6	82.24	290.13	2,262.36	7,328.95	6.79	25.260	3.240	24.19	20.25
25.5	68.80	245.71	2,175.15	6,291.91	6.37	25.607	2.893	20.23	16.87
20.4	55.25	199.82	2,058.39	5,190.85	5.86	25.978	2.522	16.25	13.50
17.85	48.49	176.50	1,983.99	4,619.30	5.56	26.172	2.328	14.26	11.83
24 x 24 x 40.8	159.80	724.93	2,639.04	14,502.04	8.93	20.005	5.495	47.00	24.00
35.7	140.20	642.41	2,594.87	13,130.71	8.63	20.440	5.060	41.23	21.00
30.6	120.49	557.67	2,540.45	11,660.76	8.27	20.910	4.590	35.44	18.00
25.5	100.67	470.67	2,470.61	10,081.41	7.83	21.419	4.081	29.61	15.00
20.4	80.75	381.39	2,375.96	8,380.18	7.27	21.973	3.527	23.75	12.00
17.85	70.83	336.25	2,314.58	7,486.76	6.93	22.265	3.235	20.83	10.51
24 x 22 x 40.8	153.00	679.11	2,601.61	13,732.54	8.73	20.222	5.278	45.00	24.00
35.7	134.25	601.90	2,556.45	12,423.41	8.44	20.640	4.860	39.48	21.00
30.6	115.39	522.59	2,500.74	11,022.55	8.08	21.092	4.408	33.94	18.00
25.5	96.42	441.14	2,429.24	9,520.23	7.63	21.581	3.919	28.36	15.00
20.4	77.35	357.53	2,332.38	7,905.29	7.08	22.111	3.389	22.75	12.00
17.85	67.85	315.25	2,269.66	7,058.57	6.75	22.390	3.110	19.96	10.51



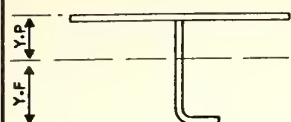
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	633.26	2,560.03	12,945.76	8.53	20.443	5.057	43.00	24.00
35.7	128.30	561.37	2,513.83	11,701.79	8.23	20.845	4.655	37.73	21.00
30.6	110.29	487.50	2,456.80	10,372.90	7.87	21.278	4.222	32.44	18.00
25.5	92.17	411.61	2,383.58	8,950.39	7.43	21.745	3.755	27.11	15.00
20.4	73.95	333.68	2,284.48	7,424.33	6.88	22.250	3.250	21.75	12.00
17.85	64.87	294.26	2,220.40	6,625.50	6.56	22.516	2.984	19.08	10.51
24 x 18 x 40.8	139.40	587.38	2,513.55	12,141.10	8.31	20.670	4.830	41.00	24.00
35.7	122.35	520.83	2,466.30	10,965.40	8.01	21.054	4.446	35.98	21.00
30.6	105.19	452.40	2,407.92	9,711.51	7.65	21.467	4.033	30.94	18.00
25.5	87.92	382.07	2,332.94	8,371.70	7.21	21.912	3.588	25.86	15.00
20.4	70.55	309.82	2,231.58	6,937.20	6.67	22.391	3.109	20.75	12.00
17.85	61.89	273.26	2,166.16	6,187.49	6.36	22.644	2.856	18.20	10.51
24 x 16 x 40.8	132.60	541.49	2,461.27	11,317.94	8.07	20.902	4.598	39.00	24.00
35.7	116.40	480.26	2,412.95	10,213.79	7.77	21.267	4.233	34.23	21.00
30.6	100.09	417.28	2,353.20	9,038.05	7.41	21.659	3.841	29.44	18.00
25.5	83.67	352.52	2,276.46	7,783.95	6.98	22.081	3.419	24.61	15.00
20.4	67.15	285.95	2,172.86	6,443.77	6.45	22.534	2.966	19.75	12.00
17.85	58.92	252.25	2,106.14	5,744.43	6.14	22.773	2.727	17.33	10.51
24 x 14 x 40.8	125.80	495.56	2,402.01	10,475.64	7.80	21.139	4.361	37.00	24.00
35.7	110.45	439.68	2,352.64	9,446.47	7.51	21.485	4.015	32.48	21.00
30.6	94.99	382.16	2,291.53	8,352.20	7.16	21.855	3.645	27.94	18.00
25.5	79.42	322.97	2,213.06	7,186.91	6.74	22.253	3.247	23.36	15.00
20.4	63.75	262.08	2,107.30	5,943.92	6.22	22.679	2.821	18.75	12.00
17.85	55.94	231.25	2,039.36	5,296.26	5.91	22.903	2.597	16.45	10.51
24 x 12 x 40.8	119.00	449.62	2,334.30	9,613.53	7.52	21.382	4.118	35.00	24.00
35.7	104.50	399.09	2,283.92	8,662.94	7.23	21.707	3.793	30.73	21.00
30.6	89.89	347.03	2,221.51	7,653.60	6.89	22.055	3.445	26.44	18.00
25.5	75.17	293.41	2,141.40	6,580.38	6.47	22.427	3.073	22.11	15.00
20.4	60.35	238.21	2,033.64	5,437.53	5.97	22.826	2.674	17.75	12.00
17.85	52.96	210.24	1,964.61	4,842.86	5.67	23.035	2.465	15.58	10.51
24 x 10 x 40.8	112.20	403.64	2,256.17	8,730.90	7.21	21.630	3.870	33.00	24.00
35.7	98.55	358.47	2,204.88	7,862.70	6.92	21.934	3.566	28.98	21.00
30.6	84.79	311.88	2,141.30	6,941.90	6.59	22.258	3.242	24.94	18.00
25.5	70.92	263.85	2,059.74	5,964.12	6.19	22.604	2.896	20.86	15.00
20.4	56.95	214.34	1,950.27	4,924.46	5.70	22.975	2.525	16.75	12.00
17.85	49.98	189.23	1,880.37	4,384.16	5.41	23.168	2.332	14.70	10.51
24 x 8 x 40.8	105.40	357.65	2,165.02	7,827.00	6.87	21.885	3.615	31.00	24.00
35.7	92.60	317.84	2,113.03	7,045.19	6.59	22.166	3.334	27.23	21.00
30.6	79.69	276.73	2,048.53	6,216.72	6.26	22.465	3.035	23.44	18.00
25.5	66.67	234.28	1,965.82	5,337.90	5.88	22.785	2.715	19.61	15.00
20.4	53.55	190.46	1,855.13	4,404.59	5.41	23.126	2.374	15.75	12.00
17.85	47.00	168.22	1,784.72	3,920.06	5.13	23.304	2.196	13.82	10.51
24 x 6 x 40.8	98.60	311.62	2,057.30	6,901.07	6.49	22.146	3.354	29.00	24.00
35.7	86.65	277.19	2,004.98	6,209.86	6.22	22.403	3.097	25.48	21.00
30.6	74.59	241.56	1,939.97	5,477.68	5.91	22.676	2.824	21.94	18.00
25.5	62.42	204.70	1,856.68	4,701.46	5.54	22.968	2.532	18.36	15.00
20.4	50.15	166.58	1,745.56	3,877.78	5.09	23.278	2.222	14.75	12.00
17.85	44.02	147.20	1,675.17	3,450.47	4.83	23.440	2.060	12.95	10.51
21 x 20 x 40.8	136.00	535.61	2,199.33	9,691.18	7.44	18.094	4.406	40.00	21.00
35.7	119.37	475.07	2,156.83	8,759.59	7.18	18.439	4.061	35.11	18.37
30.6	102.64	412.77	2,103.76	7,763.95	6.86	18.809	3.691	30.19	15.75
25.5	85.80	348.70	2,035.00	6,698.02	6.47	19.209	3.291	25.23	13.12
20.4	68.85	282.84	1,941.52	5,554.71	5.98	19.639	2.861	20.25	10.50
17.85	60.40	249.51	1,881.08	4,956.45	5.70	19.865	2.635	17.77	9.20
21 x 18 x 40.8	129.20	495.43	2,156.72	9,064.79	7.24	18.297	4.203	38.00	21.00
35.7	113.42	439.53	2,113.08	8,186.51	6.97	18.626	3.874	33.36	18.37
30.6	97.54	381.98	2,058.58	7,249.46	6.65	18.978	3.522	28.69	15.75



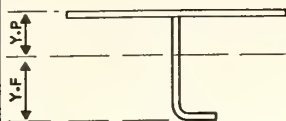
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	322.78	1,988.06	6,248.15	6.27	19.357	3.143	23.98	13.12
20.4	65.45	261.90	1,892.41	5,176.32	5.79	19.765	2.735	19.25	10.50
17.85	57.43	231.07	1,830.74	4,616.38	5.51	19.978	2.522	16.89	9.20
21 x 16 x 40.8	122.40	455.21	2,108.63	8,423.75	7.02	18.505	3.995	36.00	21.00
35.7	107.47	403.97	2,063.82	7,601.39	6.75	18.817	3.683	31.61	18.37
30.6	92.44	351.19	2,007.88	6,725.46	6.44	19.150	3.350	27.19	15.75
25.5	77.30	296.86	1,935.60	5,791.14	6.06	19.508	2.992	22.73	13.12
20.4	62.05	240.95	1,837.82	4,792.99	5.59	19.892	2.608	18.25	10.50
17.85	54.45	212.63	1,775.00	4,272.36	5.32	20.093	2.407	16.01	9.20
21 x 14 x 40.8	115.60	414.97	2,053.92	7,767.54	6.78	18.718	3.782	34.00	21.00
35.7	101.52	368.39	2,007.95	7,003.86	6.52	19.012	3.488	29.86	18.37
30.6	87.34	320.39	1,950.59	6,191.68	6.21	19.326	3.174	25.69	15.75
25.5	73.05	270.93	1,876.58	5,326.83	5.83	19.661	2.839	21.48	13.12
20.4	58.65	220.00	1,776.80	4,404.63	5.38	20.021	2.479	17.25	10.50
17.85	51.47	194.19	1,712.93	3,924.33	5.11	20.209	2.291	15.14	9.20
21 x 12 x 40.8	108.80	374.71	1,991.12	7,095.62	6.52	18.936	3.564	32.00	21.00
35.7	95.57	332.80	1,944.03	6,393.50	6.26	19.211	3.289	28.11	18.37
30.6	82.24	289.57	1,885.32	5,647.84	5.96	19.504	2.996	24.19	15.75
25.5	68.80	244.99	1,809.71	4,855.05	5.59	19.817	2.683	20.23	13.12
20.4	55.25	199.05	1,708.14	4,011.13	5.15	20.152	2.348	16.25	10.50
17.85	48.49	175.74	1,643.38	3,572.21	4.89	20.326	2.174	14.26	9.20
21 x 10 x 40.8	102.00	334.42	1,918.30	6,407.41	6.23	19.160	3.340	30.00	21.00
35.7	89.62	297.19	1,870.21	5,769.91	5.98	19.415	3.085	26.36	18.37
30.6	77.14	258.74	1,810.29	5,093.65	5.68	19.686	2.814	22.69	15.75
25.5	64.55	219.05	1,733.30	4,375.60	5.33	19.976	2.524	18.98	13.12
20.4	51.85	178.09	1,630.30	3,612.39	4.90	20.284	2.216	15.25	10.50
17.85	45.51	157.30	1,564.94	3,215.94	4.66	20.445	2.055	13.39	9.20
21 x 8 x 40.8	95.20	294.10	1,832.84	5,702.32	5.91	19.389	3.111	28.00	21.00
35.7	83.67	261.56	1,783.96	5,132.64	5.67	19.623	2.877	24.61	18.37
30.6	72.04	227.90	1,723.12	4,528.82	5.38	19.872	2.628	21.19	15.75
25.5	60.30	193.10	1,645.14	3,888.31	5.05	20.136	2.364	17.73	13.12
20.4	48.45	157.13	1,541.31	3,208.31	4.64	20.418	2.082	14.25	10.50
17.85	42.53	138.85	1,475.77	2,855.43	4.40	20.565	1.935	12.51	9.20
21 x 6 x 40.8	88.40	253.76	1,731.14	4,979.71	5.56	19.623	2.877	26.00	21.00
35.7	77.72	225.92	1,681.89	4,481.25	5.33	19.836	2.664	22.86	18.37
30.6	66.94	197.05	1,620.62	3,953.03	5.06	20.061	2.439	19.69	15.75
25.5	56.05	167.14	1,542.31	3,392.98	4.73	20.300	2.200	16.48	13.12
20.4	45.05	136.16	1,438.58	2,798.78	4.34	20.554	1.946	13.25	10.50
17.85	39.56	120.40	1,373.51	2,490.62	4.12	20.687	1.813	11.63	9.20
18 x 18 x 40.8	119.00	408.60	1,800.61	6,494.11	6.18	15.893	3.607	35.00	18.00
35.7	104.50	362.81	1,760.65	5,865.99	5.95	16.168	3.332	30.73	15.75
30.6	89.89	315.58	1,710.34	5,195.26	5.67	16.462	3.038	26.44	13.50
25.5	75.17	266.91	1,644.93	4,478.11	5.34	16.778	2.722	22.11	11.25
20.4	60.35	216.77	1,556.26	3,710.28	4.93	17.116	2.384	17.75	9.00
15.3	45.42	165.16	1,428.82	2,886.95	4.41	17.479	2.021	13.36	6.75
18 x 16 x 40.8	112.20	374.11	1,756.87	6,014.39	5.98	16.077	3.423	33.00	18.00
35.7	98.55	332.28	1,715.70	5,428.21	5.75	16.336	3.164	28.98	15.75
30.6	84.79	289.13	1,663.96	4,803.34	5.48	16.613	2.887	24.94	13.50
25.5	70.92	244.62	1,596.90	4,136.47	5.15	16.910	2.590	20.86	11.25
20.4	56.95	198.75	1,506.37	3,423.93	4.75	17.227	2.273	16.75	9.00
15.3	42.87	151.51	1,377.15	2,661.55	4.25	17.567	1.933	12.61	6.75
18 x 14 x 40.8	105.40	339.58	1,706.93	5,523.11	5.77	16.264	3.236	31.00	18.00
35.7	92.60	301.74	1,664.57	4,980.98	5.54	16.508	2.992	27.23	15.75
30.6	79.69	262.66	1,611.44	4,404.00	5.27	16.767	2.733	23.44	13.50
25.5	66.67	222.33	1,542.80	3,789.31	4.95	17.044	2.456	19.61	11.25
20.4	53.55	180.73	1,450.59	3,133.77	4.56	17.340	2.160	15.75	9.00
15.3	40.32	137.85	1,319.94	2,433.84	4.07	17.656	1.844	11.86	6.75



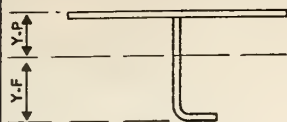
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

60t

STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	305.04	1,649.40	5,019.86	5.53	16.457	3.043	29.00	18.00
35.7	86.65	271.18	1,605.90	4,524.01	5.31	16.683	2.817	25.48	15.75
30.6	74.59	236.18	1,551.47	3,997.02	5.05	16.924	2.576	21.94	13.50
25.5	62.42	200.03	1,481.41	3,436.50	4.73	17.180	2.320	18.36	11.25
20.4	50.15	162.70	1,387.80	2,839.75	4.35	17.454	2.046	14.75	9.00
15.3	37.77	124.19	1,256.27	2,203.79	3.88	17.746	1.754	11.11	6.75
18 x 10 x 40.8	91.80	270.46	1,582.38	4,504.18	5.27	16.654	2.846	27.00	18.00
35.7	80.70	240.60	1,537.88	4,056.96	5.06	16.862	2.638	23.73	15.75
30.6	69.49	209.69	1,482.34	3,582.20	4.80	17.083	2.417	20.44	13.50
25.5	58.17	177.72	1,411.14	3,077.88	4.50	17.319	2.181	17.11	11.25
20.4	46.75	144.67	1,316.59	2,541.76	4.13	17.569	1.931	13.75	9.00
15.3	35.22	110.53	1,184.98	1,971.37	3.68	17.836	1.664	10.36	6.75
18 x 8 x 40.8	85.00	235.87	1,503.33	3,975.62	4.98	16.855	2.645	25.00	18.00
35.7	74.75	210.00	1,458.09	3,579.50	4.78	17.045	2.455	21.98	15.75
30.6	64.39	183.19	1,401.78	3,159.29	4.53	17.246	2.254	18.94	13.50
25.5	53.92	155.40	1,329.92	2,713.33	4.24	17.460	2.040	15.86	11.25
20.4	43.35	126.64	1,235.15	2,239.75	3.89	17.687	1.813	12.75	9.00
15.3	32.67	96.86	1,104.60	1,736.53	3.47	17.928	1.572	9.61	6.75
18 x 6 x 40.8	78.20	201.24	1,408.69	3,433.67	4.66	17.062	2.437	23.00	18.00
35.7	68.80	179.39	1,363.18	3,091.27	4.46	17.232	2.268	20.23	15.75
30.6	59.29	156.67	1,306.70	2,728.06	4.23	17.412	2.088	17.44	13.50
25.5	49.67	133.08	1,234.97	2,342.68	3.96	17.603	1.897	14.61	11.25
20.4	39.95	108.60	1,141.10	1,933.62	3.63	17.805	1.695	11.75	9.00
15.3	30.12	83.20	1,013.28	1,499.25	3.23	18.020	1.480	8.86	6.75



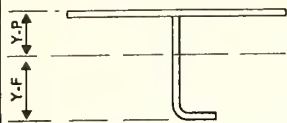
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

50t

STEEL

10.2 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 18 x 30.6	89.89	112.27	218.63	1,353.72	6.77	6.192	12.058	26.44	13.50
25.5	75.17	102.20	189.57	1,211.83	6.93	6.393	11.857	22.11	11.25
20.4	60.35	91.99	158.61	1,062.54	7.13	6.699	11.551	17.75	9.00
15.3	45.42	81.62	125.35	902.12	7.40	7.197	11.053	13.36	6.75
18 x 16 x 30.6	84.79	110.68	199.94	1,300.18	6.81	6.503	11.747	24.94	13.50
25.5	70.92	100.79	173.36	1,163.17	6.96	6.710	11.540	20.86	11.25
20.4	56.95	90.75	145.06	1,018.83	7.16	7.024	11.226	16.75	9.00
15.3	42.87	80.56	114.66	863.51	7.41	7.531	10.719	12.61	6.75
18 x 14 x 30.6	79.69	108.81	181.14	1,240.61	6.83	6.849	11.401	23.44	13.50
25.5	66.67	99.13	157.08	1,109.17	6.98	7.061	11.189	19.61	11.25
20.4	53.55	89.30	131.46	970.50	7.17	7.382	10.868	15.75	9.00
15.3	40.32	79.32	103.95	821.03	7.40	7.899	10.351	11.86	6.75
18 x 12 x 30.6	74.59	106.59	162.23	1,173.91	6.84	7.236	11.014	21.94	13.50
25.5	62.42	97.15	140.72	1,048.88	6.99	7.454	10.796	18.36	11.25
20.4	50.15	87.57	117.81	916.76	7.16	7.781	10.469	14.75	9.00
15.3	37.77	77.83	93.21	774.08	7.37	8.305	9.945	11.11	6.75
18 x 10 x 30.6	69.49	103.88	143.19	1,098.73	6.83	7.673	10.577	20.44	13.50
25.5	58.17	94.75	124.27	981.15	6.96	7.895	10.355	17.11	11.25
20.4	46.75	85.48	104.12	856.66	7.12	8.228	10.022	13.75	9.00
15.3	35.22	76.04	82.44	721.90	7.32	8.756	9.494	10.36	6.75
18 x 8 x 30.6	64.39	100.52	124.04	1,013.34	6.78	8.169	10.081	18.94	13.50
25.5	53.92	91.78	107.75	904.51	6.90	8.394	9.856	15.86	11.25
20.4	43.35	82.88	90.37	788.98	7.05	8.730	9.520	12.75	9.00
15.3	32.67	71.65	73.82	663.58	7.22	9.261	8.989	9.61	6.75
18 x 6 x 30.6	59.29	96.24	104.77	915.50	6.67	8.738	9.512	17.44	13.50
25.5	49.67	87.99	91.15	817.07	6.79	8.964	9.286	14.61	11.25
20.4	39.95	76.58	79.58	712.21	6.92	9.300	8.950	11.75	9.00
15.3	30.12	60.84	71.01	597.96	7.06	9.829	8.421	8.86	6.75
18 x 4 x 30.6	54.19	85.39	90.61	802.27	6.49	9.396	8.854	15.94	13.50
25.5	45.42	74.47	83.01	716.37	6.59	9.620	8.630	13.36	11.25
20.4	36.55	62.73	75.25	624.38	6.71	9.953	8.297	10.75	9.00
15.3	27.57	50.00	67.32	523.58	6.83	10.473	7.777	8.11	6.75
16 x 12 x 30.6	69.49	89.72	139.90	888.27	6.14	6.349	9.901	20.44	12.00
25.5	58.17	82.24	121.63	797.33	6.28	6.555	9.695	17.11	10.00
20.4	46.75	74.64	102.04	700.47	6.44	6.865	9.385	13.75	8.00
15.3	35.22	66.89	80.84	594.78	6.64	7.358	8.892	10.36	6.00
16 x 10 x 30.6	64.39	87.53	123.01	831.02	6.14	6.756	9.494	18.94	12.00
25.5	53.92	80.29	106.99	745.36	6.27	6.966	9.284	15.86	10.00
20.4	43.35	72.92	89.81	653.94	6.42	7.281	8.969	12.75	8.00
15.3	32.67	65.40	71.20	553.94	6.60	7.780	8.470	9.61	6.00
16 x 8 x 30.6	59.29	84.77	106.00	765.43	6.10	7.221	9.029	17.44	12.00
25.5	49.67	77.83	92.27	686.08	6.22	7.435	8.815	14.61	10.00
20.4	39.95	70.76	77.53	601.15	6.36	7.754	8.496	11.75	8.00
15.3	30.12	61.54	63.54	507.99	6.51	8.255	7.995	8.86	6.00
16 x 6 x 30.6	54.19	81.21	88.86	689.52	6.01	7.760	8.490	15.94	12.00
25.5	45.42	74.66	77.46	617.81	6.12	7.975	8.275	13.36	10.00
20.4	36.55	65.19	67.98	540.76	6.24	8.295	7.955	10.75	8.00
15.3	27.57	51.84	61.14	455.90	6.37	8.794	7.456	8.11	6.00
16 x 4 x 30.6	49.09	71.59	76.42	600.67	5.85	8.390	7.860	14.44	12.00
25.5	41.17	62.57	70.41	538.34	5.94	8.604	7.646	12.11	10.00
20.4	33.15	52.80	64.25	470.99	6.05	8.920	7.330	9.75	8.00
15.3	25.02	42.12	57.94	396.37	6.15	9.409	6.841	7.36	6.00



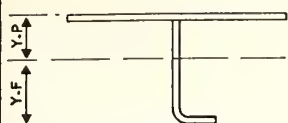
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

50t

STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 12 x 30.6	66.94	81.71	129.08	763.06	5.78	5.912	9.338	19.69	11.25
25.5	56.05	75.14	112.38	686.71	5.92	6.111	9.139	16.48	9.37
20.4	45.05	68.44	94.38	605.01	6.08	6.410	8.840	13.25	7.50
15.3	33.95	61.61	74.83	515.30	6.27	6.886	8.364	9.98	5.62
15 x 11 x 30.6	64.39	80.79	121.19	739.26	5.79	6.100	9.150	18.94	11.25
25.5	53.92	74.31	105.52	664.99	5.92	6.302	8.948	15.86	9.37
20.4	43.35	67.71	88.64	585.43	6.07	6.604	8.646	12.75	7.50
15.3	32.67	60.98	70.30	497.97	6.25	7.084	8.166	9.61	5.62
15 x 10 x 30.6	61.84	79.76	113.28	713.78	5.79	6.301	8.949	18.19	11.25
25.5	51.80	73.39	98.65	641.78	5.91	6.506	8.744	15.23	9.37
20.4	41.65	66.90	82.89	564.58	6.06	6.811	8.439	12.25	7.50
15.3	31.40	60.27	65.76	479.59	6.23	7.293	7.957	9.23	5.62
15 x 9 x 30.6	59.29	78.61	105.32	686.44	5.78	6.517	8.733	17.44	11.25
25.5	49.67	72.36	91.75	616.95	5.90	6.724	8.526	14.61	9.37
20.4	39.95	65.99	77.13	542.32	6.04	7.032	8.218	11.75	7.50
15.3	30.12	59.48	61.22	460.06	6.20	7.515	7.735	8.86	5.62
15 x 8 x 30.6	56.74	77.30	97.34	657.04	5.76	6.750	8.500	16.69	11.25
25.5	47.55	71.19	84.84	590.30	5.87	6.958	8.292	13.98	9.37
20.4	38.25	64.96	71.35	518.51	6.01	7.267	7.983	11.25	7.50
15.3	28.85	56.67	58.59	439.27	6.15	7.752	7.498	8.48	5.62
15 x 7 x 30.6	54.19	75.80	89.32	625.32	5.73	7.001	8.249	15.94	11.25
25.5	45.42	69.85	77.89	561.63	5.84	7.210	8.040	13.36	9.37
20.4	36.55	63.78	65.56	492.99	5.96	7.520	7.730	10.75	7.50
15.3	27.57	52.11	57.57	417.09	6.09	8.004	7.246	8.11	5.62
15 x 6 x 30.6	51.64	74.08	81.27	591.01	5.68	7.272	7.978	15.19	11.25
25.5	43.30	68.32	70.93	530.70	5.78	7.482	7.768	12.73	9.37
20.4	34.85	59.75	62.43	465.57	5.90	7.792	7.458	10.25	7.50
15.3	26.30	47.54	56.39	393.38	6.02	8.274	6.976	7.73	5.62
15 x 5 x 30.6	49.09	72.07	73.19	553.78	5.62	7.567	7.683	14.44	11.25
25.5	41.17	63.94	66.53	497.23	5.71	7.776	7.474	12.11	9.37
20.4	33.15	53.93	60.85	436.01	5.82	8.085	7.165	9.75	7.50
15.3	25.02	42.97	55.03	367.98	5.92	8.564	6.686	7.36	5.62
15 x 4 x 30.6	46.54	65.07	69.71	513.22	5.53	7.887	7.363	13.69	11.25
25.5	39.05	56.94	64.42	460.91	5.62	8.095	7.155	11.48	9.37
20.4	31.45	48.09	59.00	404.07	5.71	8.402	6.848	9.25	7.50
15.3	23.75	38.39	53.44	340.69	5.81	8.874	6.376	6.98	5.62
14 x 10 x 30.6	59.29	72.27	103.77	607.09	5.43	5.850	8.400	17.44	10.50
25.5	49.67	66.73	90.50	547.32	5.56	6.048	8.202	14.61	8.75
20.4	39.95	61.06	76.13	482.87	5.70	6.342	7.908	11.75	7.00
15.3	30.12	55.27	60.44	411.43	5.86	6.807	7.443	8.86	5.25
14 x 9 x 30.6	56.74	71.25	96.36	583.72	5.43	6.057	8.193	16.69	10.50
25.5	47.55	65.81	84.06	525.99	5.54	6.257	7.993	13.98	8.75
20.4	38.25	60.25	70.74	463.66	5.68	6.554	7.696	11.25	7.00
15.3	28.85	54.56	56.19	394.46	5.83	7.021	7.229	8.48	5.25
14 x 8 x 30.6	54.19	70.09	88.92	558.52	5.41	6.281	7.969	15.94	10.50
25.5	45.42	64.76	77.60	503.05	5.52	6.483	7.767	13.36	8.75
20.4	36.55	59.32	65.33	443.06	5.65	6.782	7.468	10.75	7.00
15.3	27.57	51.92	53.76	376.36	5.79	7.249	7.001	8.11	5.25
14 x 7 x 30.6	51.64	68.75	81.44	531.25	5.39	6.523	7.727	15.19	10.50
25.5	43.30	63.57	71.11	478.30	5.49	6.726	7.524	12.73	8.75
20.4	34.85	58.26	59.91	420.92	5.61	7.026	7.224	10.25	7.00
15.3	26.30	47.65	52.83	357.02	5.73	7.492	6.758	7.73	5.25



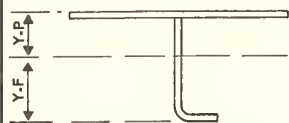
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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10.2# PLATE WEIGHT

STEEL

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
14 x 6 x 30.6	49.09	67.21	73.93	501.66	5.34	6.785	7.465	14.44	10.50
25.5	41.17	62.18	64.60	451.51	5.44	6.989	7.261	12.11	8.75
20.4	33.15	54.48	57.04	397.06	5.55	7.289	6.961	9.75	7.00
15.3	25.02	43.37	51.77	336.28	5.66	7.754	6.496	7.36	5.25
14 x 5 x 30.6	46.54	65.39	66.38	469.43	5.28	7.071	7.179	13.69	10.50
25.5	39.05	58.07	60.56	422.44	5.38	7.274	6.976	11.48	8.75
20.4	31.45	49.02	55.61	371.28	5.48	7.573	6.677	9.25	7.00
15.3	23.75	39.08	50.52	314.02	5.57	8.034	6.216	6.98	5.25
14 x 4 x 30.6	43.99	58.80	63.24	434.19	5.20	7.384	6.866	12.94	10.50
25.5	36.92	51.52	58.64	390.78	5.29	7.586	6.664	10.86	8.75
20.4	29.75	43.56	53.91	343.32	5.38	7.882	6.368	8.75	7.00
15.3	22.47	34.79	49.05	290.03	5.46	8.337	5.913	6.61	5.25
13 x 9 x 30.6	54.19	64.17	87.64	490.84	5.07	5.601	7.649	15.94	9.75
25.5	45.42	59.48	76.57	443.55	5.19	5.793	7.457	13.36	8.12
20.4	36.55	54.69	64.51	392.16	5.32	6.079	7.171	10.75	6.50
15.3	27.57	49.77	51.28	334.66	5.46	6.526	6.724	8.11	4.87
13 x 8 x 30.6	51.64	63.14	80.74	469.49	5.06	5.815	7.435	15.19	9.75
25.5	43.30	58.56	70.56	424.02	5.17	6.009	7.241	12.73	8.12
20.4	34.85	53.86	59.48	374.53	5.29	6.297	6.953	10.25	6.50
15.3	26.30	47.30	49.05	319.07	5.42	6.745	6.505	7.73	4.87
13 x 7 x 30.6	49.09	61.96	73.81	446.31	5.04	6.047	7.203	14.44	9.75
25.5	41.17	57.50	64.54	402.89	5.14	6.243	7.007	12.11	8.12
20.4	33.15	52.92	54.43	355.53	5.25	6.532	6.718	9.75	6.50
15.3	25.02	43.32	48.22	302.36	5.37	6.979	6.271	7.36	4.87
13 x 6 x 30.6	46.54	60.59	66.84	421.07	5.00	6.300	6.950	13.69	9.75
25.5	39.05	56.26	58.49	379.95	5.10	6.496	6.754	11.48	8.12
20.4	31.45	49.37	51.82	334.99	5.20	6.785	6.465	9.25	6.50
15.3	23.75	39.33	47.26	284.42	5.30	7.231	6.019	6.98	4.87
13 x 5 x 30.6	43.99	58.96	59.83	393.48	4.95	6.577	6.673	12.94	9.75
25.5	36.92	52.41	54.80	354.96	5.04	6.773	6.477	10.86	8.12
20.4	29.75	44.29	50.53	312.73	5.13	7.061	6.189	8.75	6.50
15.3	22.47	35.33	46.12	265.09	5.22	7.503	5.747	6.61	4.87
13 x 4 x 30.6	41.44	52.78	57.02	363.18	4.87	6.880	6.370	12.19	9.75
25.5	34.80	46.31	53.06	327.63	4.95	7.075	6.175	10.23	8.12
20.4	28.05	39.20	48.98	288.51	5.04	7.360	5.890	8.25	6.50
15.3	21.20	31.33	44.78	244.21	5.11	7.796	5.454	6.23	4.87
12 x 9 x 30.6	51.64	57.36	79.15	407.42	4.72	5.148	7.102	15.19	9.00
25.5	43.30	53.38	69.27	369.31	4.83	5.332	6.918	12.73	7.50
20.4	34.85	49.30	58.44	327.59	4.95	5.605	6.645	10.25	6.00
15.3	26.30	45.11	46.50	280.48	5.08	6.032	6.218	7.73	4.50
12 x 8 x 30.6	49.09	56.47	72.80	389.57	4.71	5.351	6.899	14.44	9.00
25.5	41.17	52.57	63.73	352.90	4.81	5.538	6.712	12.11	7.50
20.4	33.15	48.58	53.79	312.69	4.93	5.813	6.437	9.75	6.00
15.3	25.02	42.81	44.47	267.20	5.05	6.241	6.009	7.36	4.50
12 x 7 x 30.6	46.54	55.44	66.41	370.13	4.69	5.573	6.677	13.69	9.00
25.5	39.05	51.64	58.16	335.09	4.79	5.761	6.489	11.48	7.50
20.4	31.45	47.74	49.12	296.58	4.90	6.038	6.212	9.25	6.00
15.3	23.75	39.12	43.73	252.95	5.00	6.466	5.784	6.98	4.50
12 x 6 x 30.6	43.99	54.23	59.99	348.89	4.66	5.816	6.434	12.94	9.00
25.5	36.92	50.55	52.57	315.68	4.75	6.005	6.245	10.86	7.50
20.4	29.75	44.43	46.76	279.11	4.85	6.282	5.968	8.75	6.00
15.3	22.47	35.42	42.87	237.59	4.94	6.707	5.543	6.61	4.50



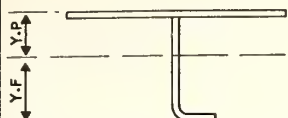
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT.²	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.²
12 x 5 x 30.6	41.44	52.79	53.52	325.56	4.61	6.083	6.167	12.19	9.00
25.5	34.80	46.96	49.25	294.46	4.69	6.271	5.979	10.23	7.50
20.4	28.05	39.73	45.61	260.11	4.78	6.547	5.703	8.25	6.00
15.3	21.20	31.71	41.85	221.01	4.86	6.969	5.281	6.23	4.50
12 x 4 x 30.6	38.89	47.02	51.05	299.83	4.54	6.376	5.874	11.44	9.00
25.5	32.67	41.32	47.68	271.17	4.61	6.563	5.687	9.61	7.50
20.4	26.35	35.01	44.21	239.36	4.69	6.836	5.414	7.75	6.00
15.3	19.92	28.00	40.62	203.04	4.75	7.252	4.998	5.86	4.50
11 x 8 x 25.5	39.05	46.81	57.09	289.37	4.45	5.069	6.181	11.48	6.87
22.95	35.29	45.16	52.82	273.90	4.50	5.185	6.065	10.38	6.19
20.4	31.45	43.46	48.26	257.27	4.56	5.331	5.919	9.25	5.50
17.85	27.64	41.77	43.53	239.79	4.62	5.509	5.741	8.13	4.82
15.3	23.75	38.45	40.01	220.58	4.67	5.737	5.513	6.98	4.12
11 x 7 x 25.5	36.92	46.00	51.99	274.58	4.43	5.281	5.969	10.86	6.87
22.95	33.38	44.39	48.12	259.76	4.48	5.399	5.851	9.82	6.19
20.4	29.75	42.73	43.97	243.81	4.53	5.545	5.705	8.75	5.50
17.85	26.15	39.67	41.08	227.03	4.58	5.723	5.527	7.69	4.82
15.3	22.47	35.05	39.36	208.59	4.63	5.951	5.299	6.61	4.12
11 x 6 x 25.5	34.80	45.05	46.87	258.41	4.40	5.514	5.736	10.23	6.87
22.95	31.46	43.39	43.49	244.33	4.44	5.631	5.619	9.25	6.19
20.4	28.05	39.67	41.88	229.17	4.49	5.777	5.473	8.25	5.50
17.85	24.66	35.80	40.26	213.20	4.53	5.955	5.295	7.25	4.82
15.3	21.20	31.65	38.60	195.63	4.57	6.182	5.068	6.23	4.12
11 x 5 x 25.5	32.67	41.72	43.91	240.65	4.35	5.769	5.481	9.61	6.87
22.95	29.55	38.64	42.40	227.44	4.39	5.886	5.364	8.69	6.19
20.4	26.35	35.34	40.85	213.18	4.43	6.032	5.218	7.75	5.50
17.85	23.17	31.92	39.30	198.14	4.46	6.208	5.042	6.82	4.82
15.3	19.92	28.23	37.69	181.59	4.50	6.432	4.818	5.86	4.12
11 x 4 x 25.5	30.55	36.54	42.52	221.06	4.27	6.051	5.199	8.98	6.87
22.95	27.64	33.87	41.09	208.85	4.31	6.167	5.083	8.13	6.19
20.4	24.65	31.00	39.61	195.65	4.34	6.310	4.940	7.25	5.50
17.85	21.69	28.02	38.12	181.70	4.37	6.484	4.766	6.38	4.82
15.3	18.65	24.81	36.58	166.32	4.40	6.704	4.546	5.48	4.12
10 x 8 x 25.5	36.92	41.28	50.65	233.11	4.08	4.602	5.648	10.86	6.25
22.95	33.38	39.92	46.91	221.07	4.13	4.713	5.537	9.82	5.63
20.4	29.75	38.52	42.89	208.03	4.19	4.850	5.400	8.75	5.00
17.85	26.15	37.13	38.71	194.25	4.24	5.018	5.232	7.69	4.38
15.3	22.47	34.21	35.68	179.01	4.29	5.232	5.018	6.61	3.75
10 x 7 x 25.5	34.80	40.58	46.02	221.05	4.07	4.803	5.447	10.23	6.25
22.95	31.46	39.26	42.63	209.49	4.11	4.914	5.336	9.25	5.63
20.4	28.05	37.90	38.99	196.98	4.16	5.052	5.198	8.25	5.00
17.85	24.66	35.20	36.53	183.74	4.21	5.220	5.030	7.25	4.38
15.3	21.20	31.11	35.11	169.08	4.25	5.434	4.816	6.23	3.75
10 x 6 x 25.5	32.67	39.76	41.37	207.81	4.04	5.023	5.227	9.61	6.25
22.95	29.55	38.33	38.48	196.82	4.08	5.135	5.115	8.69	5.63
20.4	26.35	35.07	37.15	184.91	4.12	5.273	4.977	7.75	5.00
17.85	23.17	31.67	35.82	172.29	4.16	5.440	4.810	6.82	4.38
15.3	19.92	28.00	34.44	158.32	4.20	5.653	4.597	5.86	3.75
12.75	16.69	24.17	33.05	143.10	4.22	5.921	4.329	4.91	3.13
10 x 5 x 25.5	30.55	36.68	38.77	193.20	3.99	5.267	4.983	8.98	6.25
22.95	27.64	34.01	37.53	182.88	4.03	5.378	4.872	8.13	5.63
20.4	24.65	31.13	36.26	171.67	4.07	5.515	4.735	7.25	5.00
17.85	21.69	28.13	34.97	159.79	4.10	5.681	4.569	6.38	4.38
15.3	18.65	24.89	33.64	146.63	4.13	5.892	4.358	5.48	3.75



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

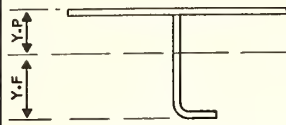
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STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 4 x 25.5	28.42	31.97	37.55	177.01	3.93	5.536	4.714	8.36	6.25
22.95	25.72	29.66	36.38	167.47	3.96	5.646	4.604	7.57	5.63
20.4	22.95	27.17	35.16	157.10	3.99	5.782	4.468	6.75	5.00
17.85	20.20	24.57	33.93	146.09	4.01	5.945	4.305	5.94	4.38
15.3	17.37	21.76	32.66	133.87	4.03	6.151	4.099	5.11	3.75
9 x 6 x 25.5	30.55	34.69	36.07	163.58	3.68	4.534	4.716	8.98	5.62
20.4	24.65	30.64	32.59	146.09	3.75	4.768	4.482	7.25	4.50
15.3	18.65	24.50	30.41	125.50	3.82	5.123	4.127	5.48	3.37
10.2	12.54	17.51	28.09	99.77	3.83	5.699	3.551	3.69	2.25
9 x 5 x 25.5	28.42	31.87	33.84	151.81	3.64	4.764	4.486	8.36	5.62
20.4	22.95	27.09	31.82	135.35	3.70	4.997	4.253	6.75	4.50
15.3	17.37	21.68	29.71	115.94	3.75	5.348	3.902	5.11	3.37
10.2	11.69	15.51	27.46	91.70	3.74	5.911	3.339	3.44	2.25
9 x 4 x 25.5*	26.30	27.63	32.79	138.69	3.57	5.020	4.230	7.73	5.62
20.4*	21.25	23.52	30.87	123.48	3.63	5.250	4.000	6.25	4.50
15.3	16.10	18.86	28.85	105.48	3.66	5.594	3.656	4.73	3.37
10.2	10.84	13.52	26.69	83.00	3.63	6.140	3.110	3.19	2.25
8 x 6 x 25.5*	28.42	29.83	30.99	125.40	3.30	4.046	4.204	8.36	5.00
20.4*	22.95	26.38	28.20	112.45	3.37	4.263	3.987	6.75	4.00
15.3	17.37	21.13	26.49	96.96	3.43	4.590	3.660	5.11	3.00
10.2	11.69	15.10	24.65	77.26	3.43	5.116	3.134	3.44	2.00
8 x 5 x 25.5	26.30	27.26	29.12	116.16	3.27	4.261	3.989	7.73	5.00
20.4	21.25	23.22	27.55	103.96	3.33	4.477	3.773	6.25	4.00
15.3	16.10	18.61	25.89	89.34	3.37	4.800	3.450	4.73	3.00
10.2	10.84	13.32	24.11	70.79	3.35	5.313	2.937	3.19	2.00
8 x 4 x 25.5*	24.17	23.50	28.23	105.80	3.22	4.503	3.747	7.11	5.00
20.4*	19.55	20.05	26.74	94.52	3.26	4.715	3.535	5.75	4.00
15.3	14.82	16.09	25.15	80.96	3.29	5.031	3.219	4.36	3.00
10.2	9.99	11.54	23.43	63.78	3.24	5.527	2.723	2.94	2.00

*Indicates similarity to (L) shape.



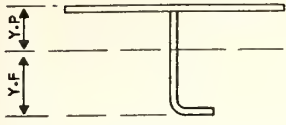
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

11.47 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 18 x 30.6	89.89	124.84	225.41	1,468.76	6.95	6.516	11.765	26.44	13.50
25.5	75.17	114.84	195.52	1,322.55	7.12	6.764	11.517	22.11	11.25
20.4	60.35	104.68	163.57	1,166.90	7.33	7.134	11.147	17.75	9.00
15.3	45.42	94.36	129.13	996.69	7.59	7.718	10.563	13.36	6.75
18 x 16 x 30.6	84.79	123.11	206.18	1,409.19	6.99	6.835	11.446	24.94	13.50
25.5	70.92	113.29	178.84	1,267.86	7.15	7.089	11.192	20.86	11.25
20.4	56.95	103.30	149.63	1,117.20	7.35	7.466	10.815	16.75	9.00
15.3	42.87	93.16	118.15	952.22	7.58	8.059	10.222	12.61	6.75
18 x 14 x 30.6	79.69	121.08	186.84	1,343.10	7.00	7.189	11.092	23.44	13.50
25.5	66.67	111.46	162.08	1,207.36	7.16	7.449	10.832	19.61	11.25
20.4	53.55	101.69	135.64	1,062.46	7.34	7.833	10.448	15.75	9.00
15.3	40.32	91.75	107.14	903.53	7.56	8.433	9.848	11.86	6.75
18 x 12 x 30.6	74.59	118.66	167.38	1,269.35	7.00	7.584	10.697	21.94	13.50
25.5	62.42	109.29	145.25	1,140.09	7.15	7.849	10.432	18.36	11.25
20.4	50.15	99.76	121.61	1,001.86	7.32	8.238	10.043	14.75	9.00
15.3	37.77	90.07	96.11	849.99	7.51	8.844	9.437	11.11	6.75
18 x 10 x 30.6	69.49	115.72	147.82	1,186.54	6.98	8.027	10.254	20.44	13.50
25.5	58.17	106.65	128.35	1,064.84	7.11	8.296	9.985	17.11	11.25
20.4	46.75	97.43	107.53	934.42	7.27	8.690	9.591	13.75	9.00
15.3	35.22	85.06	88.03	790.84	7.44	9.298	8.983	10.36	6.75
18 x 8 x 30.6	64.39	112.06	128.14	1,092.89	6.91	8.529	9.752	18.94	13.50
25.5	53.92	103.38	111.37	980.09	7.03	8.800	9.481	15.86	11.25
20.4	43.35	93.41	94.53	858.90	7.17	9.195	9.086	12.75	9.00
15.3	32.67	73.98	85.52	725.14	7.31	9.802	8.479	9.61	6.75
18 x 6 x 30.6	59.29	107.41	108.36	986.10	6.79	9.101	9.180	17.44	13.50
25.5	49.67	94.31	99.22	883.93	6.90	9.372	8.909	14.61	11.25
20.4	39.95	79.24	90.86	773.76	7.02	9.765	8.516	11.75	9.00
15.3	30.12	62.88	82.33	651.74	7.13	10.365	7.916	8.86	6.75
18 x 4 x 30.6	54.19	88.45	101.29	863.21	6.59	9.759	8.522	15.94	13.50
25.5	45.42	77.18	93.75	773.88	6.69	10.027	8.254	13.36	11.25
20.4	36.55	65.02	86.05	677.04	6.79	10.413	7.868	10.75	9.00
15.3	27.57	51.76	78.16	569.22	6.87	10.998	7.283	8.11	6.75
16 x 12 x 30.6	69.49	100.53	144.47	965.16	6.29	6.681	9.600	20.44	12.00
25.5	58.17	93.12	125.62	870.63	6.43	6.931	9.350	17.11	10.00
20.4	46.75	85.56	105.33	768.62	6.59	7.297	8.984	13.75	8.00
15.3	35.22	77.85	83.31	655.21	6.77	7.865	8.416	10.36	6.00
16 x 10 x 30.6	64.39	98.13	127.08	901.54	6.28	7.094	9.187	18.94	12.00
25.5	53.92	90.95	110.55	812.38	6.40	7.349	8.932	15.86	10.00
20.4	43.35	83.63	92.75	715.96	6.55	7.720	8.561	12.75	8.00
15.3	32.67	73.41	76.15	608.56	6.70	8.289	7.992	9.61	6.00
16 x 8 x 30.6	59.29	95.12	109.58	829.00	6.23	7.565	8.716	17.44	12.00
25.5	49.67	88.23	95.40	746.29	6.34	7.823	8.458	14.61	10.00
20.4	39.95	80.12	81.21	656.59	6.47	8.195	8.086	11.75	8.00
15.3	30.12	63.49	74.02	556.43	6.59	8.764	7.517	8.86	6.00
16 x 6 x 30.6	54.19	91.22	91.95	745.53	6.12	8.108	8.173	15.94	12.00
25.5	45.42	80.17	84.72	670.65	6.23	8.365	7.916	13.36	10.00
20.4	36.55	67.44	78.09	589.14	6.33	8.736	7.545	10.75	8.00
15.3	27.57	53.54	71.29	497.82	6.43	9.298	6.983	8.11	6.00
16 x 4 x 30.6	49.09	74.20	85.98	648.45	5.94	8.739	7.542	14.44	12.00
25.5	41.17	64.86	80.02	583.24	6.03	8.992	7.289	12.11	10.00
20.4	33.15	54.71	73.91	511.85	6.11	9.356	6.925	9.75	8.00
15.3	25.02	43.57	67.63	431.44	6.18	9.902	6.379	7.36	6.00



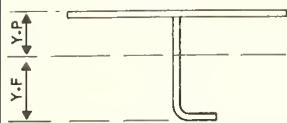
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

11.47 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 12 x 30.6	66.94	91.89	133.36	831.35	5.93	6.234	9.047	19.69	11.25
25.5	56.05	85.37	116.09	751.73	6.07	6.476	8.805	16.48	9.37
20.4	45.05	78.72	97.42	665.35	6.22	6.829	8.452	13.25	7.50
15.3	33.95	71.93	77.10	568.64	6.39	7.376	7.905	9.98	5.62
15 x 11 x 30.6	64.39	90.88	125.23	804.73	5.93	6.426	8.855	18.94	11.25
25.5	53.92	84.45	109.03	727.22	6.06	6.670	8.611	15.86	9.37
20.4	43.35	77.90	91.52	643.04	6.21	7.026	8.255	12.75	7.50
15.3	32.67	71.20	72.44	548.72	6.36	7.575	7.706	9.61	5.62
15 x 10 x 30.6	61.84	89.75	117.07	776.30	5.92	6.631	8.650	18.19	11.25
25.5	51.80	83.43	101.95	701.12	6.05	6.877	8.404	15.23	9.37
20.4	41.65	76.98	85.60	619.36	6.18	7.236	8.045	12.25	7.50
15.3	31.40	67.78	70.39	527.67	6.33	7.785	7.496	9.23	5.62
15 x 9 x 30.6	59.29	88.47	108.88	745.89	5.91	6.850	8.431	17.44	11.25
25.5	49.67	82.28	94.84	673.25	6.02	7.098	8.183	14.61	9.37
20.4	39.95	75.95	79.67	594.17	6.15	7.458	7.823	11.75	7.50
15.3	30.12	63.12	69.48	505.39	6.28	8.007	7.274	8.86	5.62
15 x 8 x 30.6	56.74	87.03	100.66	713.26	5.88	7.086	8.195	16.69	11.25
25.5	47.55	80.98	87.72	643.45	5.99	7.335	7.946	13.98	9.37
20.4	38.25	73.72	74.79	567.33	6.11	7.695	7.586	11.25	7.50
15.3	28.85	58.44	68.45	481.76	6.23	8.243	7.038	8.48	5.62
15 x 7 x 30.6	54.19	85.39	92.41	678.18	5.84	7.339	7.942	15.94	11.25
25.5	45.42	79.49	80.58	611.49	5.94	7.589	7.692	13.36	9.37
20.4	36.55	67.77	73.46	538.66	6.05	7.949	7.332	10.75	7.50
15.3	27.57	53.76	67.28	456.66	6.15	8.494	6.787	8.11	5.62
15 x 6 x 30.6	51.64	83.50	84.12	640.35	5.79	7.612	7.669	15.19	11.25
25.5	43.30	73.42	77.79	577.14	5.88	7.861	7.420	12.73	9.37
20.4	34.85	61.80	71.94	507.97	5.98	8.220	7.061	10.25	7.50
15.3	26.30	49.08	65.94	429.95	6.07	8.761	6.520	7.73	5.62
15 x 5 x 30.6	49.09	75.81	81.29	599.43	5.71	7.907	7.374	14.44	11.25
25.5	41.17	66.23	75.80	540.12	5.80	8.155	7.126	12.11	9.37
20.4	33.15	55.82	70.17	475.04	5.89	8.511	6.770	9.75	7.50
15.3	25.02	44.39	64.38	401.47	5.96	9.045	6.236	7.36	5.62
15 x 4 x 30.6	46.54	67.46	78.69	555.03	5.61	8.227	7.054	13.69	11.25
25.5	39.05	59.02	73.46	500.10	5.69	8.473	6.808	11.48	9.37
20.4	31.45	49.82	68.08	439.61	5.77	8.824	6.457	9.25	7.50
15.3	23.75	39.69	62.55	371.04	5.83	9.349	5.932	6.98	5.62
14 x 10 x 30.6	59.29	81.63	107.30	662.07	5.56	6.170	8.111	17.44	10.50
25.5	49.67	76.13	93.54	599.41	5.68	6.408	7.873	14.61	8.75
20.4	39.95	70.52	78.61	530.85	5.82	6.753	7.528	11.75	7.00
15.3	30.12	62.28	64.76	453.38	5.95	7.280	7.001	8.86	5.25
14 x 9 x 30.6	56.74	80.50	99.66	635.93	5.55	6.381	7.900	16.69	10.50
25.5	47.55	75.11	86.91	575.36	5.66	6.620	7.661	13.98	8.75
20.4	38.25	69.59	73.06	509.00	5.79	6.967	7.314	11.25	7.00
15.3	28.85	57.90	63.94	433.94	5.91	7.494	6.787	8.48	5.25
14 x 8 x 30.6	54.19	79.21	91.99	607.82	5.53	6.608	7.673	15.94	10.50
25.5	45.42	73.94	80.25	549.57	5.64	6.848	7.433	13.36	8.75
20.4	36.55	67.50	68.54	485.67	5.75	7.195	7.086	10.75	7.00
15.3	27.57	53.53	63.01	413.29	5.86	7.721	6.560	8.11	5.25
14 x 7 x 30.6	51.64	77.74	84.28	577.51	5.49	6.852	7.429	15.19	10.50
25.5	43.30	72.60	73.57	521.85	5.59	7.093	7.188	12.73	8.75
20.4	34.85	61.92	67.34	460.69	5.70	7.440	6.841	10.25	7.00
15.3	26.30	49.14	61.94	391.32	5.79	7.963	6.318	7.73	5.25

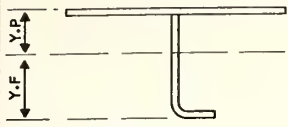


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
14 x 6 x 30.6	49.09	76.03	76.55	544.73	5.44	7.116	7.165	14.44	10.50
25.5	41.17	66.87	71.06	491.98	5.54	7.357	6.924	12.11	8.75
20.4	33.15	56.33	65.96	433.88	5.63	7.703	6.578	9.75	7.00
15.3	25.02	44.75	60.71	367.89	5.70	8.221	6.060	7.36	5.25
14 x 5 x 30.6	46.54	68.78	74.03	509.16	5.37	7.403	6.878	13.69	10.50
25.5	39.05	60.15	69.25	459.68	5.46	7.643	6.638	11.48	8.75
20.4	31.45	50.73	64.33	405.05	5.54	7.985	6.296	9.25	7.00
15.3	23.75	40.35	59.28	342.85	5.60	8.497	5.784	6.98	5.25
14 x 4 x 30.6	43.99	60.98	71.65	470.43	5.28	7.715	6.566	12.94	10.50
25.5	36.92	53.40	67.10	424.67	5.36	7.952	6.329	10.86	8.75
20.4	29.75	45.11	62.41	373.95	5.43	8.290	5.991	8.75	7.00
15.3	22.47	35.95	57.58	316.03	5.47	8.792	5.489	6.61	5.25
13 x 9 x 30.6	54.19	72.79	90.67	536.25	5.19	5.914	7.367	15.94	9.75
25.5	45.42	68.15	79.17	486.41	5.30	6.144	7.137	13.36	8.12
20.4	36.55	63.40	66.62	431.43	5.42	6.476	6.805	10.75	6.50
15.3	27.57	52.82	58.51	368.70	5.53	6.980	6.301	8.11	4.87
13 x 8 x 30.6	51.64	71.65	83.56	512.30	5.17	6.131	7.150	15.19	9.75
25.5	43.30	67.12	72.98	464.34	5.28	6.363	6.918	12.73	8.12
20.4	34.85	61.44	62.46	411.35	5.38	6.695	6.586	10.25	6.50
15.3	26.30	48.74	57.68	350.84	5.48	7.198	6.083	7.73	4.87
13 x 7 x 30.6	49.09	70.34	76.40	486.40	5.14	6.366	6.915	14.44	9.75
25.5	41.17	65.92	66.77	440.55	5.24	6.598	6.683	12.11	8.12
20.4	33.15	56.24	61.39	389.81	5.34	6.931	6.350	9.75	6.50
15.3	25.02	44.65	56.71	331.79	5.42	7.431	5.850	7.36	4.87
13 x 6 x 30.6	46.54	68.81	69.22	458.30	5.10	6.621	6.660	13.69	9.75
25.5	39.05	60.54	64.53	414.84	5.19	6.853	6.428	11.48	8.12
20.4	31.45	51.04	60.13	366.64	5.27	7.184	6.097	9.25	6.50
15.3	23.75	40.56	55.60	311.44	5.34	7.679	5.602	6.98	4.87
13 x 5 x 30.6	43.99	62.00	67.01	427.70	5.03	6.898	6.383	12.94	9.75
25.5	36.92	54.28	62.90	386.96	5.11	7.129	6.152	10.86	8.12
20.4	29.75	45.81	58.66	341.64	5.19	7.457	5.824	8.75	6.50
15.3	22.47	36.45	54.28	289.64	5.24	7.945	5.336	6.61	4.87
13 x 4 x 30.6	41.44	54.75	64.85	394.27	4.94	7.202	6.079	12.19	9.75
25.5	34.80	48.00	60.94	356.62	5.02	7.429	5.852	10.23	8.12
20.4	28.05	40.58	56.90	314.60	5.08	7.753	5.528	8.25	6.50
15.3	21.20	32.34	52.72	266.24	5.11	8.231	5.050	6.23	4.87
12 x 9 x 30.6	51.64	65.35	81.92	446.46	4.83	5.450	6.831	15.19	9.00
25.5	43.30	61.42	71.63	406.09	4.93	5.669	6.612	12.73	7.50
20.4	34.85	57.38	60.34	361.20	5.04	5.986	6.295	10.25	6.00
15.3	26.30	47.87	53.21	309.48	5.15	6.465	5.816	7.73	4.50
12 x 8 x 30.6	49.09	64.36	75.36	426.32	4.82	5.657	6.624	14.44	9.00
25.5	41.17	60.51	65.92	387.44	4.91	5.878	6.403	12.11	7.50
20.4	33.15	55.55	56.55	344.13	5.01	6.196	6.085	9.75	6.00
15.3	25.02	44.09	52.47	294.21	5.10	6.673	5.608	7.36	4.50
12 x 7 x 30.6	46.54	63.20	68.77	404.47	4.79	5.881	6.400	13.69	9.00
25.5	39.05	59.45	60.18	367.28	4.88	6.103	6.178	11.48	7.50
20.4	31.45	50.74	55.59	325.78	4.97	6.421	5.860	9.25	6.00
15.3	23.75	40.30	51.60	277.89	5.04	6.896	5.385	6.98	4.50
12 x 6 x 30.6	43.99	61.85	62.14	380.68	4.75	6.126	6.155	12.94	9.00
25.5	36.92	54.42	58.22	345.41	4.83	6.348	5.933	10.86	7.50
20.4	29.75	45.92	54.47	305.98	4.91	6.664	5.617	8.75	6.00
15.3	22.47	36.50	50.60	260.41	4.97	7.134	5.147	6.61	4.50



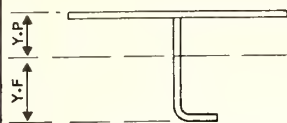
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

11.47 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
12 x 5 x 30.6	41.44	55.48	60.24	354.69	4.69	6.393	5.888	12.19	9.00
25.5	34.80	48.63	56.75	321.63	4.76	6.614	5.667	10.23	7.50
20.4	28.05	41.08	53.15	284.56	4.83	6.927	5.354	8.25	6.00
15.3	21.20	32.70	49.41	241.65	4.87	7.390	4.891	6.23	4.50
12 x 4 x 30.6	38.89	48.78	58.30	326.16	4.60	6.687	5.594	11.44	9.00
25.5	32.67	42.82	54.99	295.64	4.67	6.904	5.377	9.61	7.50
20.4	26.35	36.23	51.55	261.30	4.73	7.212	5.069	7.75	6.00
15.3	19.92	28.89	47.98	221.44	4.75	7.666	4.615	5.86	4.50
11 x 8 x 25.5	39.05	54.12	59.05	318.56	4.54	5.394	5.887	11.48	6.87
22.95	35.29	52.49	54.59	301.87	4.59	5.530	5.751	10.38	6.19
20.4	31.45	49.82	50.80	283.76	4.64	5.696	5.585	9.25	5.50
17.85	27.64	44.88	49.12	264.55	4.68	5.895	5.386	8.13	4.82
15.3	23.75	39.57	47.37	243.22	4.72	6.147	5.134	6.98	4.12
11 x 7 x 25.5	36.92	53.19	53.79	301.72	4.51	5.609	5.672	10.86	6.87
22.95	33.38	49.74	51.60	285.72	4.56	5.744	5.537	9.82	6.19
20.4	29.75	45.40	49.96	268.34	4.60	5.910	5.371	8.75	5.50
17.85	26.15	40.91	48.32	249.90	4.63	6.109	5.172	7.69	4.82
15.3	22.47	36.08	46.61	229.43	4.66	6.358	4.923	6.61	4.12
11 x 6 x 25.5	34.80	48.51	52.11	283.39	4.47	5.842	5.439	10.23	6.87
22.95	31.46	44.87	50.57	268.18	4.51	5.977	5.304	9.25	6.19
20.4	28.05	40.97	48.97	251.66	4.54	6.142	5.139	8.25	5.50
17.85	24.66	36.93	47.37	234.10	4.57	6.339	4.942	7.25	4.82
15.3	21.20	32.59	45.71	214.62	4.59	6.586	4.695	6.23	4.12
11 x 5 x 25.5	32.67	43.19	50.81	263.38	4.41	6.097	5.184	9.61	6.87
22.95	29.55	39.98	49.33	249.09	4.44	6.231	5.050	8.69	6.19
20.4	26.35	36.53	47.79	233.55	4.47	6.394	4.887	7.75	5.50
17.85	23.17	32.94	46.25	217.02	4.49	6.588	4.693	6.82	4.82
15.3	19.92	29.09	44.64	198.67	4.50	6.830	4.451	5.86	4.12
11 x 4 x 25.5	30.55	37.86	49.23	241.43	4.32	6.377	4.904	8.98	6.87
22.95	27.64	35.06	47.82	228.22	4.35	6.509	4.772	8.13	6.19
20.4	24.65	32.06	46.36	213.82	4.37	6.668	4.613	7.25	5.50
17.85	21.69	28.94	44.88	198.49	4.38	6.858	4.423	6.38	4.82
15.3	18.65	25.58	43.35	181.46	4.39	7.095	4.186	5.48	4.12
10 x 8 x 25.5	36.92	47.94	52.39	257.39	4.17	4.912	5.369	10.86	6.25
22.95	33.38	46.61	48.47	244.29	4.21	5.040	5.241	9.82	5.63
20.4	29.75	44.27	45.23	229.99	4.26	5.196	5.085	8.75	5.00
17.85	26.15	39.89	43.84	214.73	4.30	5.383	4.898	7.69	4.38
15.3	22.47	35.19	42.40	197.68	4.33	5.618	4.663	6.61	3.75
10 x 7 x 25.5	34.80	47.15	47.61	243.56	4.14	5.115	5.166	10.23	6.25
22.95	31.46	44.06	45.84	230.98	4.18	5.243	5.038	9.25	5.63
20.4	28.05	40.24	44.49	217.25	4.22	5.398	4.883	8.25	5.00
17.85	24.66	36.27	43.14	202.59	4.25	5.585	4.696	7.25	4.38
15.3	21.20	32.00	41.73	186.21	4.28	5.818	4.463	6.23	3.75
10 x 6 x 25.5	32.67	42.81	46.21	228.46	4.11	5.337	4.944	9.61	6.25
22.95	29.55	39.62	44.94	216.49	4.14	5.464	4.817	8.69	5.63
20.4	26.35	36.21	43.63	203.42	4.17	5.618	4.663	7.75	5.00
17.85	23.17	32.65	42.31	189.45	4.20	5.803	4.478	6.82	4.38
15.3	19.92	28.82	40.93	173.86	4.21	6.034	4.247	5.86	3.75
12.75	16.69	24.81	39.54	156.73	4.21	6.317	3.964	4.91	3.13
10 x 5 x 25.5	30.55	37.98	45.07	211.90	4.05	5.579	4.702	8.98	6.25
22.95	27.64	35.17	43.85	200.66	4.08	5.705	4.576	8.13	5.63
20.4	24.65	32.15	42.59	188.36	4.10	5.858	4.423	7.25	5.00
17.85	21.69	29.01	41.31	175.21	4.12	6.040	4.241	6.38	4.38
15.3	18.65	25.62	39.98	160.53	4.13	6.266	4.015	5.48	3.75



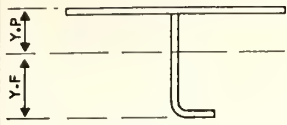
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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11.47 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 4 x 25.5	28.42	33.12	43.68	193.66	3.97	5.847	4.434	8.36	6.25
22.95	25.72	30.70	42.52	183.27	3.99	5.971	4.310	7.57	5.63
20.4	22.95	28.08	41.31	171.89	4.01	6.120	4.161	6.75	5.00
17.85	20.20	25.36	40.10	159.70	4.02	6.298	3.983	5.94	4.38
15.3	17.37	22.41	38.82	146.10	4.02	6.518	3.763	5.11	3.75
9 x 6 x 25.5	30.55	37.33	40.51	180.30	3.73	4.830	4.451	8.98	5.62
20.4	24.65	31.62	38.44	161.02	3.79	5.093	4.188	7.25	4.50
15.3	18.65	25.18	36.27	137.95	3.82	5.477	3.804	5.48	3.37
10.2	12.54	17.90	33.92	108.74	3.77	6.075	3.206	3.69	2.25
9 x 5 x 25.5	28.42	32.98	39.53	166.87	3.68	5.060	4.221	8.36	5.62
20.4	22.95	27.96	37.54	148.73	3.73	5.319	3.962	6.75	4.50
15.3	17.37	22.30	35.43	127.02	3.75	5.697	3.584	5.11	3.37
10.2	11.69	15.87	33.15	99.59	3.67	6.276	3.005	3.44	2.25
9 x 4 x 25.5*	26.30	28.61	38.32	152.01	3.61	5.314	3.967	7.73	5.62
20.4*	21.25	24.29	36.42	135.25	3.64	5.568	3.713	6.25	4.50
15.3	16.10	19.40	34.41	115.14	3.64	5.935	3.346	4.73	3.37
10.2	10.84	13.83	32.20	89.80	3.55	6.492	2.789	3.19	2.25
8 x 6 x 25.5*	28.42	32.06	35.02	138.60	3.36	4.323	3.958	8.36	5.00
20.4*	22.95	27.21	33.42	124.20	3.41	4.565	3.716	6.75	4.00
15.3	17.37	21.70	31.71	106.69	3.43	4.917	3.364	5.11	3.00
10.2	11.69	15.43	29.83	84.20	3.38	5.458	2.823	3.44	2.00
8 x 5 x 25.5	26.30	28.21	34.19	127.99	3.31	4.538	3.743	7.73	5.00
20.4	21.25	23.96	32.65	114.42	3.35	4.776	3.505	6.25	4.00
15.3	16.10	19.12	30.99	97.93	3.36	5.121	3.160	4.73	3.00
10.2	10.84	13.61	29.15	76.84	3.28	5.645	2.636	3.19	2.00
8 x 4 x 25.5*	24.17	24.32	33.15	116.18	3.24	4.777	3.504	7.11	5.00
20.4*	19.55	20.69	31.68	103.64	3.27	5.010	3.271	5.75	4.00
15.3	14.82	16.54	30.09	88.39	3.26	5.344	2.937	4.36	3.00
10.2	9.99	11.79	28.31	68.94	3.17	5.846	2.435	2.94	2.00

*Indicates similarity to (L) shape.



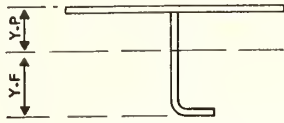
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

50t

STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 20 x 30.6	102.64	175.13	302.08	2,362.74	8.21	7.822	13.491	30.19	15.75
25.5	85.80	161.42	261.33	2,126.70	8.40	8.138	13.175	25.23	13.12
20.4	68.85	147.52	218.04	1,875.33	8.64	8.601	12.712	20.25	10.50
17.85	60.40	140.56	195.46	1,742.59	8.77	8.915	12.398	17.77	9.20
21 x 18 x 30.6	97.54	172.95	279.09	2,275.78	8.23	8.154	13.159	28.69	15.75
25.5	81.55	159.45	241.47	2,046.80	8.42	8.477	12.836	23.98	13.12
20.4	65.45	145.77	201.50	1,802.69	8.64	8.947	12.366	19.25	10.50
17.85	57.43	138.91	180.65	1,673.67	8.77	9.265	12.048	16.89	9.20
21 x 16 x 30.6	92.44	170.43	256.01	2,180.69	8.24	8.518	12.795	27.19	15.75
25.5	77.30	157.19	221.53	1,959.67	8.42	8.846	12.467	22.73	13.12
20.4	62.05	143.76	184.91	1,723.77	8.63	9.322	11.991	18.25	10.50
17.85	54.45	137.02	165.80	1,598.97	8.74	9.644	11.669	16.01	9.20
21 x 14 x 30.6	87.34	167.50	232.84	2,076.28	8.24	8.917	12.396	25.69	15.75
25.5	73.05	154.55	201.54	1,864.29	8.41	9.250	12.063	21.48	13.12
20.4	58.65	141.41	168.28	1,637.73	8.60	9.732	11.581	17.25	10.50
17.85	51.47	134.83	150.93	1,517.74	8.70	10.056	11.257	15.14	9.20
21 x 12 x 30.6	82.24	164.04	209.57	1,961.11	8.21	9.358	11.955	24.19	15.75
25.5	68.80	151.44	181.48	1,759.43	8.37	9.695	11.618	20.23	13.12
20.4	55.25	138.65	151.62	1,543.54	8.54	10.180	11.133	16.25	10.50
17.85	48.49	132.23	136.03	1,429.09	8.64	10.506	10.807	14.26	9.20
21 x 10 x 30.6	77.14	159.89	186.20	1,833.41	8.15	9.846	11.467	22.69	15.75
25.5	64.55	147.71	161.36	1,643.60	8.30	10.186	11.127	18.98	13.12
20.4	51.85	134.92	135.34	1,440.02	8.45	10.673	10.640	15.25	10.50
17.85	45.51	121.10	129.13	1,331.94	8.54	10.999	10.314	13.39	9.20
21 x 8 x 30.6	72.04	154.83	162.74	1,691.04	8.05	10.391	10.922	21.19	15.75
25.5	60.30	141.17	143.17	1,514.97	8.18	10.731	10.582	17.73	13.12
20.4	48.45	118.18	131.32	1,325.67	8.32	11.218	10.095	14.25	10.50
17.85	42.53	106.14	125.36	1,225.01	8.39	11.541	9.772	12.51	9.20
21 x 6 x 30.6	66.94	139.18	148.52	1,531.30	7.89	11.002	10.311	19.69	15.75
25.5	56.05	120.92	137.51	1,371.30	8.01	11.341	9.972	16.48	13.12
20.4	45.05	101.40	126.30	1,198.73	8.13	11.822	9.491	13.25	10.50
17.85	39.56	91.16	120.67	1,106.75	8.18	12.141	9.172	11.63	9.20
18 x 18 x 30.6	89.89	139.40	232.14	1,595.03	7.13	6.871	11.442	26.44	13.50
25.5	75.17	129.46	201.32	1,442.91	7.31	7.167	11.146	22.11	11.25
20.4	60.35	119.36	168.29	1,278.83	7.51	7.599	10.714	17.75	9.00
15.3	45.42	109.08	132.62	1,096.08	7.75	8.265	10.048	13.36	6.75
18 x 16 x 30.6	84.79	137.51	212.36	1,528.48	7.16	7.197	11.116	24.94	13.50
25.5	70.92	127.74	184.17	1,381.28	7.32	7.500	10.813	20.86	11.25
20.4	56.95	117.82	153.97	1,222.30	7.51	7.939	10.374	16.75	9.00
15.3	42.87	107.71	121.36	1,045.04	7.73	8.611	9.702	12.61	6.75
18 x 14 x 30.6	79.69	135.28	192.48	1,454.90	7.17	7.559	10.754	23.44	13.50
25.5	66.67	125.73	166.95	1,313.37	7.32	7.867	10.446	19.61	11.25
20.4	53.55	116.01	139.61	1,160.31	7.50	8.311	10.002	15.75	9.00
15.3	40.32	106.11	110.08	989.43	7.68	8.988	9.325	11.86	6.75
18 x 12 x 30.6	74.59	132.63	172.49	1,373.09	7.15	7.960	10.353	21.94	13.50
25.5	62.42	123.32	149.67	1,238.16	7.30	8.273	10.040	18.36	11.25
20.4	50.15	113.85	125.21	1,092.00	7.46	8.721	9.592	14.75	9.00
15.3	37.77	98.78	104.19	928.61	7.62	9.401	8.912	11.11	6.75
18 x 10 x 30.6	69.49	129.41	152.40	1,281.61	7.11	8.409	9.904	20.44	13.50
25.5	58.17	120.40	132.31	1,154.41	7.24	8.725	9.588	17.11	11.25
20.4	46.75	110.77	111.23	1,016.37	7.38	9.176	9.137	13.75	9.00
15.3	35.22	87.46	101.88	861.81	7.52	9.854	8.459	10.36	6.75



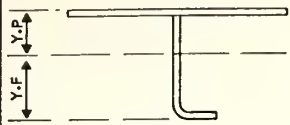
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 8 x 30.6	64.39	125.41	132.21	1,178.62	7.03	8.915	9.398	18.94	13.50
25.5	53.92	114.89	116.79	1,060.58	7.15	9.232	9.081	15.86	11.25
20.4	43.35	96.28	108.00	932.16	7.27	9.681	8.632	12.75	9.00
15.3	32.67	76.12	99.01	788.11	7.37	10.353	7.960	9.61	6.75
18 x 6 x 30.6	59.29	111.90	120.33	1,061.80	6.90	9.489	8.824	17.44	13.50
25.5	49.67	97.39	112.19	954.73	7.00	9.803	8.510	14.61	11.25
20.4	39.95	81.76	103.89	837.85	7.09	10.248	8.065	11.75	9.00
15.3	30.12	64.76	95.39	706.36	7.17	10.908	7.405	8.86	6.75
18 x 4 x 30.6	54.19	91.49	113.63	928.17	6.67	10.145	8.168	15.94	13.50
25.5	45.42	79.82	106.16	834.39	6.76	10.453	7.860	13.36	11.25
20.4	36.55	67.19	98.50	731.48	6.84	10.887	7.426	10.75	9.00
15.3	27.57	53.37	90.64	615.19	6.88	11.526	6.787	8.11	6.75
16 x 12 x 30.6	69.49	113.04	148.96	1,048.43	6.43	7.039	9.274	20.44	12.00
25.5	58.17	105.68	129.45	949.12	6.57	7.332	8.981	17.11	10.00
20.4	46.75	98.17	108.42	840.46	6.71	7.752	8.561	13.75	8.00
15.3	35.22	85.56	90.50	717.46	6.86	8.385	7.928	10.36	6.00
16 x 10 x 30.6	64.39	110.40	131.08	977.56	6.40	7.458	8.855	18.94	12.00
25.5	53.92	103.27	113.96	883.78	6.53	7.755	8.558	15.86	10.00
20.4	43.35	95.50	95.99	780.96	6.65	8.177	8.136	12.75	8.00
15.3	32.67	75.43	88.55	664.44	6.77	8.809	7.504	9.61	6.00
16 x 8 x 30.6	59.29	107.07	113.09	897.19	6.34	7.934	8.379	17.44	12.00
25.5	49.67	98.41	100.24	810.07	6.44	8.232	8.081	14.61	10.00
20.4	39.95	82.55	93.26	714.32	6.55	8.654	7.659	11.75	8.00
15.3	30.12	65.27	86.10	605.64	6.64	9.279	7.034	8.86	6.00
16 x 6 x 30.6	54.19	94.98	102.77	805.25	6.22	8.478	7.835	15.94	12.00
25.5	45.42	82.77	96.34	726.26	6.31	8.774	7.539	13.36	10.00
20.4	36.55	69.54	89.74	639.17	6.39	9.191	7.122	10.75	8.00
15.3	27.57	55.09	82.97	540.07	6.44	9.803	6.510	8.11	6.00
16 x 4 x 30.6	49.09	76.76	97.00	699.05	6.01	9.107	7.206	14.44	12.00
25.5	41.17	67.06	91.10	630.14	6.09	9.396	6.917	12.11	10.00
20.4	33.15	56.50	85.04	553.75	6.15	9.801	6.512	9.75	8.00
15.3	25.02	44.89	78.78	466.46	6.17	10.392	5.921	7.36	6.00
15 x 12 x 30.6	66.94	103.66	137.54	905.16	6.07	6.581	8.732	19.69	11.25
25.5	56.05	97.20	119.63	821.20	6.20	6.864	8.449	16.48	9.37
20.4	45.05	90.60	100.26	728.78	6.34	7.269	8.044	13.25	7.50
15.3	33.95	79.14	83.84	623.41	6.47	7.877	7.436	9.98	5.62
15 x 11 x 30.6	64.39	102.54	129.17	875.33	6.06	6.777	8.536	18.94	11.25
25.5	53.92	96.17	112.37	793.54	6.18	7.062	8.251	15.86	9.37
20.4	43.35	89.66	94.20	703.44	6.31	7.468	7.845	12.75	7.50
15.3	32.67	74.38	82.99	600.66	6.44	8.076	7.237	9.61	5.62
15 x 10 x 30.6	61.84	101.29	120.78	843.56	6.05	6.985	8.328	18.19	11.25
25.5	51.80	95.03	105.10	764.17	6.16	7.271	8.042	15.23	9.37
20.4	41.65	88.12	88.62	676.62	6.28	7.678	7.635	12.25	7.50
15.3	31.40	69.61	82.06	576.71	6.39	8.285	7.028	9.23	5.62
15 x 9 x 30.6	59.29	99.88	112.35	809.66	6.02	7.206	8.107	17.44	11.25
25.5	49.67	93.74	97.80	732.92	6.13	7.494	7.819	14.61	9.37
20.4	39.95	82.03	87.46	648.19	6.24	7.901	7.412	11.75	7.50
15.3	30.12	64.83	81.01	551.44	6.33	8.506	6.807	8.86	5.62
15 x 8 x 30.6	56.74	98.28	103.90	773.41	5.99	7.444	7.869	16.69	11.25
25.5	47.55	90.48	92.28	699.59	6.09	7.732	7.581	13.98	9.37
20.4	38.25	75.94	86.14	618.00	6.19	8.138	7.175	11.25	7.50
15.3	28.85	60.05	79.82	524.76	6.26	8.739	6.574	8.48	5.62



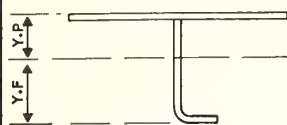
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	95.42	96.47	734.54	5.94	7.698	7.615	15.94	11.25
25.5	45.42	83.14	90.62	663.99	6.03	7.986	7.327	13.36	9.37
20.4	36.55	69.83	84.63	585.88	6.12	8.390	6.923	10.75	7.50
15.3	27.57	55.26	78.47	496.54	6.18	8.986	6.327	8.11	5.62
15 x 6 x 30.6	51.64	86.90	94.37	692.78	5.87	7.972	7.341	15.19	11.25
25.5	43.30	75.79	88.71	625.86	5.96	8.258	7.055	12.73	9.37
20.4	34.85	63.71	82.91	551.64	6.04	8.659	6.654	10.25	7.50
15.3	26.30	50.47	76.93	466.65	6.08	9.247	6.066	7.73	5.62
15 x 5 x 30.6	49.09	78.36	91.93	647.78	5.79	8.267	7.046	14.44	11.25
25.5	41.17	68.41	86.49	584.93	5.87	8.550	6.763	12.11	9.37
20.4	33.15	57.57	80.90	515.07	5.93	8.946	6.367	9.75	7.50
15.3	25.02	45.67	75.13	434.93	5.96	9.524	5.789	7.36	5.62
15 x 4 x 30.6	46.54	69.79	89.06	599.16	5.68	8.585	6.728	13.69	11.25
25.5	39.05	61.02	83.88	540.89	5.75	8.864	6.449	11.48	9.37
20.4	31.45	51.43	78.54	475.91	5.80	9.254	6.059	9.25	7.50
15.3	23.75	40.86	73.02	401.20	5.81	9.819	5.494	6.98	5.62
14 x 10 x 30.6	59.29	92.44	110.71	721.06	5.68	6.513	7.800	17.44	10.50
25.5	49.67	87.00	96.43	654.61	5.79	6.789	7.524	14.61	8.75
20.4	39.95	80.91	81.42	580.85	5.91	7.179	7.134	11.75	7.00
15.3	30.12	63.92	75.69	496.02	6.01	7.760	6.553	8.86	5.25
14 x 9 x 30.6	56.74	91.18	102.85	691.79	5.66	6.726	7.587	16.69	10.50
25.5	47.55	85.84	89.61	627.51	5.77	7.003	7.310	13.98	8.75
20.4	38.25	75.21	80.37	556.09	5.87	7.394	6.919	11.25	7.00
15.3	28.85	59.45	74.74	473.91	5.95	7.972	6.341	8.48	5.25
14 x 8 x 30.6	54.19	89.75	94.96	660.41	5.63	6.955	7.358	15.94	10.50
25.5	45.42	82.76	84.53	598.56	5.73	7.232	7.081	13.36	8.75
20.4	36.55	69.50	79.17	529.74	5.82	7.622	6.691	10.75	7.00
15.3	27.57	54.97	73.66	450.52	5.89	8.196	6.117	8.11	5.25
14 x 7 x 30.6	51.64	87.03	88.11	626.69	5.59	7.201	7.112	15.19	10.50
25.5	43.30	75.90	83.03	567.55	5.67	7.477	6.836	12.73	8.75
20.4	34.85	63.78	77.81	501.66	5.76	7.866	6.447	10.25	7.00
15.3	26.30	50.48	72.42	425.75	5.81	8.434	5.879	7.73	5.25
14 x 6 x 30.6	49.09	79.08	86.21	590.36	5.53	7.465	6.848	14.44	10.50
25.5	41.17	69.02	81.29	534.27	5.61	7.741	6.572	12.11	8.75
20.4	33.15	58.05	76.23	471.66	5.68	8.126	6.187	9.75	7.00
15.3	25.02	45.99	71.00	399.46	5.71	8.687	5.626	7.36	5.25
14 x 5 x 30.6	46.54	71.09	83.99	551.09	5.45	7.752	6.561	13.69	10.50
25.5	39.05	62.12	79.26	498.44	5.52	8.024	6.289	11.48	8.75
20.4	31.45	52.30	74.38	439.54	5.57	8.404	5.909	9.25	7.00
15.3	23.75	41.49	69.34	371.52	5.59	8.955	5.358	6.98	5.25
14 x 4 x 30.6	43.99	63.08	81.35	508.53	5.34	8.062	6.251	12.94	10.50
25.5	36.92	55.20	76.85	459.78	5.40	8.330	5.983	10.86	8.75
20.4	29.75	46.55	72.20	405.07	5.45	8.703	5.610	8.75	7.00
15.3	22.47	36.98	67.37	341.75	5.45	9.241	5.072	6.61	5.25
13 x 9 x 30.6	54.19	82.75	93.59	584.69	5.30	6.247	7.066	15.94	9.75
25.5	45.42	78.16	81.62	531.55	5.40	6.512	6.801	13.36	8.12
20.4	36.55	68.55	73.45	472.05	5.49	6.886	6.427	10.75	6.50
15.3	27.57	54.20	68.58	403.03	5.57	7.436	5.877	8.11	4.87
13 x 8 x 30.6	51.64	81.48	86.26	557.82	5.27	6.467	6.846	15.19	9.75
25.5	43.30	75.26	76.99	506.65	5.36	6.732	6.581	12.73	8.12
20.4	34.85	63.24	72.37	449.30	5.45	7.105	6.208	10.25	6.50
15.3	26.30	50.02	67.60	382.74	5.51	7.651	5.662	7.73	4.87



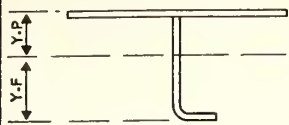
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

12.75 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
13 x 7 x 30.6	49.09	78.90	80.01	528.88	5.23	6.703	6.610	14.44	9.75
25.5	41.17	68.87	75.64	479.93	5.31	6.968	6.345	12.11	8.12
20.4	33.15	57.91	71.14	424.99	5.39	7.339	5.974	9.75	6.50
15.3	25.02	45.84	66.48	361.20	5.43	7.880	5.433	7.36	4.87
13 x 6 x 30.6	46.54	71.51	78.31	497.60	5.17	6.958	6.355	13.69	9.75
25.5	39.05	62.47	74.07	451.16	5.25	7.222	6.091	11.48	8.12
20.4	31.45	52.57	69.71	398.97	5.31	7.590	5.723	9.25	6.50
15.3	23.75	41.65	65.18	338.31	5.34	8.123	5.190	6.98	4.87
13 x 5 x 30.6	43.99	64.09	76.29	463.69	5.10	7.235	6.078	12.94	9.75
25.5	36.92	56.04	72.23	420.12	5.16	7.496	5.817	10.86	8.12
20.4	29.75	47.21	68.02	371.03	5.21	7.858	5.455	8.75	6.50
15.3	22.47	37.46	63.65	313.92	5.22	8.381	4.932	6.61	4.87
13 x 4 x 30.6	41.44	56.63	73.89	426.80	5.00	7.537	5.776	12.19	9.75
25.5	34.80	49.60	70.02	386.51	5.05	7.793	5.520	10.23	8.12
20.4	28.05	41.85	66.02	340.98	5.09	8.148	5.165	8.25	6.50
15.3	21.20	33.25	61.84	287.90	5.09	8.657	4.656	6.23	4.87
12 x 9 x 30.6	51.64	74.58	84.57	487.98	4.93	5.770	6.543	15.19	9.00
25.5	43.30	70.69	73.84	444.71	5.02	6.022	6.291	12.73	7.50
20.4	34.85	62.07	66.69	395.84	5.11	6.377	5.936	10.25	6.00
15.3	26.30	49.09	62.54	338.62	5.18	6.898	5.415	7.73	4.50
12 x 8 x 30.6	49.09	73.46	77.81	465.27	4.91	5.979	6.334	14.44	9.00
25.5	41.17	67.96	69.66	423.56	4.99	6.232	6.081	12.11	7.50
20.4	33.15	57.15	65.73	376.42	5.07	6.586	5.727	9.75	6.00
15.3	25.02	45.22	61.66	321.21	5.12	7.103	5.210	7.36	4.50
12 x 7 x 30.6	46.54	71.02	72.16	440.73	4.87	6.206	6.107	13.69	9.00
25.5	39.05	62.06	68.46	400.80	4.95	6.458	5.855	11.48	7.50
20.4	31.45	52.22	64.63	355.62	5.01	6.810	5.503	9.25	6.00
15.3	23.75	41.34	60.65	302.70	5.05	7.322	4.991	6.98	4.50
12 x 6 x 30.6	43.99	64.20	70.64	414.12	4.82	6.451	5.862	12.94	9.00
25.5	36.92	56.14	67.05	376.24	4.89	6.702	5.611	10.86	7.50
20.4	29.75	47.27	63.34	333.30	4.94	7.051	5.262	8.75	6.00
15.3	22.47	37.46	59.47	282.99	4.96	7.554	4.759	6.61	4.50
12 x 5 x 30.6	41.44	57.34	68.84	385.19	4.75	6.718	5.595	12.19	9.00
25.5	34.80	50.19	65.39	349.65	4.81	6.966	5.347	10.23	7.50
20.4	28.05	42.31	61.81	309.29	4.85	7.310	5.003	8.25	6.00
15.3	21.20	33.57	58.08	261.95	4.85	7.803	4.510	6.23	4.50
12 x 4 x 30.6	38.89	50.45	66.66	353.59	4.65	7.009	5.304	11.44	9.00
25.5	32.67	44.23	63.39	320.77	4.70	7.253	5.060	9.61	7.50
20.4	26.35	37.34	59.98	283.37	4.73	7.589	4.724	7.75	6.00
15.3	19.92	29.68	56.41	239.44	4.72	8.068	4.245	5.86	4.50
11 x 8 x 25.5	39.05	60.88	62.53	348.97	4.62	5.732	5.581	11.48	6.87
22.95	35.29	56.22	60.92	330.76	4.65	5.884	5.429	10.38	6.19
20.4	31.45	51.24	59.25	310.85	4.69	6.067	5.246	9.25	5.50
17.85	27.64	46.08	57.57	289.56	4.71	6.284	5.029	8.13	4.82
15.3	23.75	40.56	55.83	265.75	4.73	6.553	4.760	6.98	4.12
11 x 7 x 25.5	36.92	55.46	61.48	329.86	4.58	5.948	5.365	10.86	6.87
22.95	33.38	51.23	59.90	312.40	4.61	6.098	5.215	9.82	6.19
20.4	29.75	46.70	58.27	293.30	4.64	6.280	5.033	8.75	5.50
17.85	26.15	42.02	56.63	272.88	4.66	6.495	4.818	7.69	4.82
15.3	22.47	36.99	54.92	250.06	4.66	6.760	4.553	6.61	4.12
11 x 6 x 25.5	34.80	50.03	60.24	309.18	4.52	6.180	5.133	10.23	6.87
22.95	31.46	46.22	58.71	292.58	4.55	6.330	4.983	9.25	6.19
20.4	28.05	42.16	57.13	274.42	4.57	6.509	4.804	8.25	5.50



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

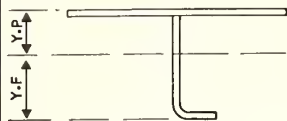
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STEEL

12.75 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
11 x 6 x 17.85	24.66	37.94	55.53	255.00	4.58	6.721	4.592	7.25	4.82
15.3	21.20	33.42	53.86	233.31	4.58	6.982	4.331	6.23	4.12
11 x 5 x 25.5	32.67	44.57	58.75	286.71	4.45	6.433	4.880	9.61	6.87
22.95	29.55	41.20	57.28	271.12	4.47	6.580	4.733	8.69	6.19
20.4	26.35	37.60	55.76	254.05	4.48	6.757	4.556	7.75	5.50
17.85	23.17	33.86	54.22	235.78	4.49	6.964	4.349	6.82	4.82
15.3	19.92	29.84	52.61	215.39	4.48	7.218	4.095	5.86	4.12
11 x 4 x 25.5	30.55	39.09	56.95	262.22	4.35	6.709	4.604	8.98	6.87
22.95	27.64	36.16	55.55	247.80	4.36	6.852	4.461	8.13	6.19
20.4	24.65	33.03	54.10	231.99	4.37	7.025	4.288	7.25	5.50
17.85	21.69	29.76	52.63	215.08	4.37	7.226	4.087	6.38	4.82
15.3	18.65	26.25	51.08	196.18	4.35	7.473	3.840	5.48	4.12
10 x 8 x 25.5	36.92	54.00	55.62	282.57	4.24	5.233	5.080	10.86	6.25
22.95	33.38	49.90	54.30	268.17	4.27	5.374	4.939	9.82	5.63
20.4	29.75	45.50	52.93	252.34	4.30	5.546	4.767	8.75	5.00
17.85	26.15	40.94	51.55	235.31	4.32	5.748	4.565	7.69	4.38
15.3	22.47	36.04	50.10	216.17	4.33	5.998	4.315	6.61	3.75
10 x 7 x 25.5	34.80	49.08	54.70	266.80	4.20	5.436	4.877	10.23	6.25
22.95	31.46	45.36	53.41	252.97	4.23	5.577	4.736	9.25	5.63
20.4	28.05	41.37	52.07	237.77	4.25	5.747	4.566	8.25	5.00
17.85	24.66	37.23	50.72	221.43	4.27	5.947	4.366	7.25	4.38
15.3	21.20	32.78	49.31	203.08	4.27	6.194	4.119	6.23	3.75
10 x 6 x 25.5	32.67	44.14	53.62	249.66	4.15	5.657	4.656	9.61	6.25
22.95	29.55	40.80	52.37	236.52	4.17	5.796	4.517	8.69	5.63
20.4	26.35	37.23	51.06	222.06	4.19	5.964	4.349	7.75	5.00
17.85	23.17	33.52	49.75	206.52	4.20	6.162	4.151	6.82	4.38
15.3	19.92	29.52	48.36	189.07	4.19	6.404	3.909	5.86	3.75
10 x 5 x 25.5	30.55	39.17	52.31	230.99	4.08	5.897	4.416	8.98	6.25
22.95	27.64	36.23	51.11	218.64	4.10	6.035	4.278	8.13	5.63
20.4	24.65	33.07	49.85	205.05	4.11	6.200	4.113	7.25	5.00
17.85	21.69	29.79	48.58	190.44	4.11	6.393	3.920	6.38	4.38
15.3	18.65	26.26	47.24	174.05	4.09	6.628	3.685	5.48	3.75
10 x 4 x 25.5	28.42	34.18	50.71	210.55	3.99	6.161	4.152	8.36	6.25
22.95	25.72	31.64	49.56	199.15	4.00	6.295	4.018	7.57	5.63
20.4	22.95	28.90	48.36	186.58	4.00	6.455	3.858	6.75	5.00
17.85	20.20	26.06	47.15	173.06	4.00	6.642	3.671	5.94	4.38
15.3	17.37	22.99	45.86	157.91	3.97	6.870	3.443	5.11	3.75
9 x 6 x 25.5	30.55	38.47	47.20	197.38	3.77	5.131	4.182	8.98	5.62
20.4	24.65	32.49	45.15	175.96	3.81	5.416	3.897	7.25	4.50
15.3	18.65	25.78	42.96	150.06	3.80	5.820	3.493	5.48	3.37
10.2	12.54	18.23	40.53	117.12	3.69	6.423	2.890	3.69	2.25
9 x 5 x 25.5	28.42	34.00	46.06	182.17	3.71	5.358	3.955	8.36	5.62
20.4	22.95	28.74	44.09	162.04	3.73	5.638	3.675	6.75	4.50
15.3	17.37	22.83	41.97	137.72	3.71	6.031	3.282	5.11	3.37
10.2	11.69	16.17	39.58	106.91	3.58	6.612	2.701	3.44	2.25
9 x 4 x 25.5*	26.30	29.50	44.65	165.45	3.62	5.608	3.705	7.73	5.62
20.4*	21.25	24.98	42.77	146.86	3.63	5.879	3.434	6.25	4.50
15.3	16.10	19.88	40.74	124.41	3.59	6.259	3.054	4.73	3.37
10.2	10.84	14.10	38.42	96.06	3.45	6.813	2.500	3.19	2.25
8 x 6 x 25.5*	28.42	33.03	40.97	152.02	3.39	4.603	3.710	8.36	5.00
20.4*	22.95	27.94	39.39	135.88	3.42	4.863	3.450	6.75	4.00
15.3	17.37	22.20	37.66	116.09	3.41	5.231	3.082	5.11	3.00
10.2	11.69	15.70	35.69	90.64	3.30	5.774	2.539	3.44	2.00

*Indicates similarity to (L) shape.



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

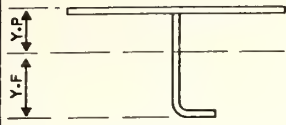
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STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
8 x 5 x 25.5	26.30	29.06	40.00	139.93	3.33	4.815	3.498	7.73	5.00
20.4	21.25	24.61	38.47	124.75	3.35	5.070	3.243	6.25	4.00
15.3	16.10	19.57	36.79	106.18	3.32	5.427	2.886	4.73	3.00
10.2	10.84	13.86	34.85	82.42	3.19	5.948	2.365	3.19	2.00
8 x 4 x 25.5*	24.17	25.07	38.79	126.58	3.25	5.049	3.264	7.11	5.00
20.4*	19.55	21.26	37.32	112.58	3.25	5.296	3.017	5.75	4.00
15.3	14.82	16.93	35.70	95.47	3.21	5.639	2.674	4.36	3.00
10.2	9.99	12.01	33.81	73.67	3.07	6.134	2.179	2.94	2.00

*Indicates similarity to (L) shape.



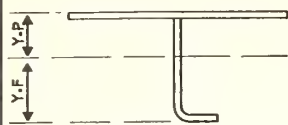
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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14.02 # PLATE WEIGHT

STEEL

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 20 x 30.6	102.64	193.36	309.89	2,541.39	8.39	8.201	13.143	30.19	15.75
25.5	85.80	179.72	268.03	2,296.24	8.59	8.567	12.777	25.23	13.12
20.4	68.85	165.88	223.46	2,032.10	8.81	9.094	12.250	20.25	10.50
17.85	60.40	158.94	200.19	1,891.02	8.94	9.446	11.898	17.77	9.20
21 x 18 x 30.6	97.54	191.00	286.35	2,445.47	8.41	8.540	12.804	28.69	15.75
25.5	81.55	177.57	247.69	2,207.46	8.59	8.912	12.432	23.98	13.12
20.4	65.45	163.94	206.54	1,950.76	8.80	9.445	11.899	19.25	10.50
17.85	57.43	157.11	185.04	1,813.56	8.92	9.801	11.543	16.89	9.20
21 x 16 x 30.6	92.44	188.27	262.72	2,340.86	8.41	8.910	12.434	27.19	15.75
25.5	77.30	175.09	227.29	2,110.95	8.58	9.287	12.057	22.73	13.12
20.4	62.05	161.71	189.57	1,862.69	8.78	9.826	11.518	18.25	10.50
17.85	54.45	155.00	169.87	1,729.91	8.88	10.183	11.161	16.01	9.20
21 x 14 x 30.6	87.34	185.08	239.00	2,226.33	8.39	9.315	12.029	25.69	15.75
25.5	73.05	172.20	206.83	2,005.63	8.56	9.697	11.647	21.48	13.12
20.4	58.65	159.12	172.58	1,767.02	8.73	10.239	11.105	17.25	10.50
17.85	51.47	152.55	154.68	1,639.30	8.82	10.598	10.746	15.14	9.20
21 x 12 x 30.6	82.24	181.33	215.19	2,100.39	8.35	9.761	11.583	24.19	15.75
25.5	68.80	168.79	186.31	1,890.24	8.50	10.145	11.199	20.23	13.12
20.4	55.25	155.54	156.06	1,662.71	8.66	10.690	10.654	16.25	10.50
17.85	48.49	139.46	149.66	1,540.82	8.74	11.049	10.295	14.26	9.20
21 x 10 x 30.6	77.14	176.83	191.29	1,961.25	8.28	10.253	11.091	22.69	15.75
25.5	64.55	164.72	165.74	1,763.27	8.42	10.639	10.705	18.98	13.12
20.4	51.85	138.48	152.40	1,548.56	8.55	11.183	10.161	15.25	10.50
17.85	45.51	124.21	146.21	1,433.40	8.62	11.540	9.804	13.39	9.20
21 x 8 x 30.6	72.04	167.29	171.35	1,806.72	8.16	10.800	10.544	21.19	15.75
25.5	60.30	145.10	159.75	1,622.89	8.28	11.185	10.159	17.73	13.12
20.4	48.45	121.37	147.95	1,423.08	8.40	11.725	9.619	14.25	10.50
17.85	42.53	108.94	142.01	1,315.78	8.45	12.078	9.266	12.51	9.20
21 x 6 x 30.6	66.94	143.21	164.50	1,634.09	7.99	11.410	9.934	19.69	15.75
25.5	56.05	124.40	153.56	1,466.84	8.09	11.792	9.552	16.48	13.12
20.4	45.05	104.23	142.40	1,284.51	8.19	12.324	9.020	13.25	10.50
17.85	39.56	93.64	136.78	1,186.41	8.22	12.670	8.674	11.63	9.20
18 x 18 x 30.6	89.89	155.01	238.31	1,722.87	7.30	7.229	11.115	26.44	13.50
25.5	75.17	145.13	206.53	1,563.56	7.47	7.571	10.773	22.11	11.25
20.4	60.35	135.08	172.44	1,389.49	7.66	8.058	10.286	17.75	9.00
15.3	45.42	124.84	135.60	1,192.33	7.87	8.793	9.551	13.36	6.75
18 x 16 x 30.6	84.79	152.94	218.03	1,648.90	7.31	7.563	10.781	24.94	13.50
25.5	70.92	143.24	188.96	1,494.60	7.47	7.909	10.435	20.86	11.25
20.4	56.95	133.36	157.79	1,325.81	7.65	8.402	9.942	16.75	9.00
15.3	42.87	123.29	124.11	1,134.53	7.83	9.142	9.202	12.61	6.75
18 x 14 x 30.6	79.69	150.51	197.65	1,567.37	7.31	7.930	10.414	23.44	13.50
25.5	66.67	141.01	171.33	1,418.88	7.46	8.282	10.062	19.61	11.25
20.4	53.55	131.34	143.10	1,256.26	7.61	8.779	9.565	15.75	9.00
15.3	40.32	112.60	121.46	1,071.85	7.77	9.519	8.825	11.86	6.75
18 x 12 x 30.6	74.59	147.60	177.17	1,477.07	7.28	8.337	10.007	21.94	13.50
25.5	62.42	138.35	153.63	1,335.37	7.42	8.692	9.652	18.36	11.25
20.4	50.15	128.38	128.92	1,179.98	7.56	9.191	9.153	14.75	9.00
15.3	37.77	101.07	119.29	1,003.65	7.68	9.931	8.413	11.11	6.75
18 x 10 x 30.6	69.49	144.08	156.60	1,376.50	7.23	8.790	9.554	20.44	13.50
25.5	58.17	135.13	135.87	1,242.80	7.35	9.147	9.197	17.11	11.25
20.4	46.75	113.62	126.00	1,095.95	7.47	9.646	8.698	13.75	9.00
15.3	35.22	89.52	116.66	929.17	7.56	10.380	7.964	10.36	6.75



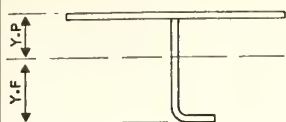
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

14.02 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 8 x 30.6	64.39	135.92	139.71	1,263.80	7.13	9.298	9.046	18.94	13.50
25.5	53.92	118.05	131.14	1,139.60	7.23	9.654	8.690	15.86	11.25
20.4	43.35	98.81	122.39	1,002.91	7.33	10.150	8.194	12.75	9.00
15.3	32.67	77.95	113.42	847.49	7.39	10.872	7.472	9.61	6.75
18 x 6 x 30.6	59.29	115.15	134.15	1,136.63	6.98	9.871	8.473	17.44	13.50
25.5	49.67	100.15	126.07	1,023.84	7.06	10.223	8.121	14.61	11.25
20.4	39.95	83.97	117.81	899.34	7.14	10.710	7.634	11.75	9.00
15.3	30.12	66.37	109.31	757.51	7.16	11.414	6.930	8.86	6.75
18 x 4 x 30.6	54.19	94.27	126.84	992.00	6.74	10.523	7.821	15.94	13.50
25.5	45.42	82.19	119.42	893.07	6.81	10.866	7.478	13.36	11.25
20.4	36.55	69.09	111.80	783.35	6.86	11.338	7.006	10.75	9.00
15.3	27.57	54.76	103.95	657.92	6.85	12.015	6.329	8.11	6.75
16 x 12 x 30.6	69.49	126.45	153.02	1,131.58	6.55	7.395	8.949	20.44	12.00
25.5	58.17	119.14	132.86	1,026.60	6.68	7.727	8.617	17.11	10.00
20.4	46.75	111.10	111.67	910.24	6.80	8.193	8.151	13.75	8.00
15.3	35.22	87.47	104.01	776.55	6.91	8.878	7.466	10.36	6.00
16 x 10 x 30.6	64.39	123.53	134.69	1,053.13	6.51	7.819	8.525	18.94	12.00
25.5	53.92	116.45	117.00	953.89	6.62	8.153	8.191	15.86	10.00
20.4	43.35	97.90	109.21	843.76	6.72	8.618	7.726	12.75	8.00
15.3	32.67	77.13	101.78	717.17	6.80	9.298	7.046	9.61	6.00
16 x 8 x 30.6	59.29	116.26	119.87	964.61	6.43	8.297	8.047	17.44	12.00
25.5	49.67	101.08	113.09	872.34	6.52	8.630	7.714	14.61	10.00
20.4	39.95	84.66	106.14	769.74	6.60	9.092	7.252	11.75	8.00
15.3	30.12	66.78	98.99	651.75	6.64	9.760	6.584	8.86	6.00
16 x 6 x 30.6	54.19	97.73	115.14	863.94	6.29	8.840	7.504	15.94	12.00
25.5	45.42	85.09	108.75	780.21	6.36	9.170	7.174	13.36	10.00
20.4	36.55	71.38	102.19	686.85	6.42	9.623	6.721	10.75	8.00
15.3	27.57	56.40	95.41	579.34	6.43	10.272	6.072	8.11	6.00
16 x 4 x 30.6	49.09	79.08	108.79	748.45	6.06	9.464	6.880	14.44	12.00
25.5	41.17	69.02	102.94	675.31	6.12	9.784	6.560	12.11	10.00
20.4	33.15	58.06	96.91	593.38	6.15	10.221	6.123	9.75	8.00
15.3	25.02	46.00	90.65	498.75	6.13	10.842	5.502	7.36	6.00
15 x 12 x 30.6	66.94	116.27	141.30	978.71	6.18	6.926	8.418	19.69	11.25
25.5	56.05	109.86	122.77	889.61	6.30	7.246	8.098	16.48	9.37
20.4	45.05	102.72	103.29	790.25	6.42	7.693	7.651	13.25	7.50
15.3	33.95	80.87	96.54	675.27	6.52	8.350	6.994	9.98	5.62
15 x 11 x 30.6	64.39	115.03	132.72	945.51	6.17	7.124	8.220	18.94	11.25
25.5	53.92	108.71	115.34	858.68	6.28	7.445	7.899	15.86	9.37
20.4	43.35	96.52	102.24	761.79	6.39	7.893	7.451	12.75	7.50
15.3	32.67	76.01	95.58	649.68	6.47	8.547	6.797	9.61	5.62
15 x 10 x 30.6	61.84	113.64	124.11	910.25	6.15	7.334	8.010	18.19	11.25
25.5	51.80	107.43	107.88	825.93	6.25	7.656	7.688	15.23	9.37
20.4	41.65	90.31	101.06	731.77	6.35	8.103	7.241	12.25	7.50
15.3	31.40	71.15	94.51	622.82	6.41	8.754	6.590	9.23	5.62
15 x 9 x 30.6	59.29	112.08	115.48	872.72	6.11	7.558	7.786	17.44	11.25
25.5	49.67	100.41	105.99	791.18	6.21	7.879	7.465	14.61	9.37
20.4	39.95	84.08	99.74	700.05	6.30	8.326	7.018	11.75	7.50
15.3	30.12	66.28	93.30	594.60	6.34	8.971	6.373	8.86	5.62
15 x 8 x 30.6	56.74	106.81	110.32	832.71	6.07	7.796	7.548	16.69	11.25
25.5	47.55	92.92	104.37	754.25	6.16	8.117	7.227	13.98	9.37
20.4	38.25	77.85	98.25	666.48	6.23	8.561	6.783	11.25	7.50
15.3	28.85	61.40	91.94	564.91	6.26	9.200	6.144	8.48	5.62



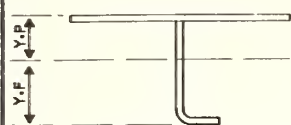
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MOOULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	98.12	108.31	789.96	6.01	8.051	7.293	15.94	11.25
25.5	45.42	85.41	102.52	714.92	6.09	8.370	6.974	13.36	9.37
20.4	36.55	71.61	96.56	630.90	6.15	8.810	6.534	10.75	7.50
15.3	27.57	56.52	90.40	533.63	6.17	9.441	5.903	8.11	5.62
15 x 6 x 30.6	51.64	89.40	106.00	744.16	5.94	8.324	7.020	15.19	11.25
25.5	43.30	77.89	100.39	672.96	6.01	8.640	6.704	12.73	9.37
20.4	34.85	65.36	94.61	593.12	6.06	9.075	6.269	10.25	7.50
15.3	26.30	51.64	88.63	500.64	6.06	9.695	5.649	7.73	5.62
15 x 5 x 30.6	49.09	80.66	103.31	695.00	5.84	8.616	6.728	14.44	11.25
25.5	41.17	70.34	97.91	628.10	5.90	8.929	6.415	12.11	9.37
20.4	33.15	59.10	92.35	552.93	5.94	9.357	5.987	9.75	7.50
15.3	25.02	46.75	86.57	465.78	5.92	9.964	5.380	7.36	5.62
15 x 4 x 30.6	46.54	71.89	100.13	642.07	5.72	8.932	6.412	13.69	11.25
25.5	39.05	62.78	95.00	580.01	5.77	9.239	6.105	11.48	9.37
20.4	31.45	52.82	89.69	510.09	5.80	9.657	5.687	9.25	7.50
15.3	23.75	41.85	84.16	428.89	5.77	10.248	5.096	6.98	5.62
14 x 10 x 30.6	59.29	104.01	113.77	779.41	5.78	6.851	7.493	17.44	10.50
25.5	49.67	98.62	98.97	708.54	5.88	7.159	7.185	14.61	8.75
20.4	39.95	82.88	93.07	628.86	5.97	7.587	6.757	11.75	7.00
15.3	30.12	65.30	87.34	535.98	6.02	8.208	6.136	8.86	5.25
14 x 9 x 30.6	56.74	102.62	105.71	746.88	5.75	7.066	7.278	16.69	10.50
25.5	47.55	91.98	97.32	678.30	5.84	7.374	6.970	13.98	8.75
20.4	38.25	77.06	91.88	601.15	5.92	7.801	6.543	11.25	7.00
15.3	28.85	60.74	86.25	511.23	5.96	8.416	5.928	8.48	5.25
14 x 8 x 30.6	54.19	97.61	101.03	712.12	5.71	7.295	7.049	15.94	10.50
25.5	45.42	84.98	95.85	646.10	5.79	7.603	6.741	13.36	8.75
20.4	36.55	71.23	90.52	571.77	5.86	8.028	6.316	10.75	7.00
15.3	27.57	56.18	85.00	485.15	5.88	8.636	5.708	8.11	5.25
14 x 7 x 30.6	51.64	89.49	99.21	674.89	5.66	7.541	6.803	15.19	10.50
25.5	43.30	77.95	94.17	611.74	5.73	7.848	6.496	12.73	8.75
20.4	34.85	65.38	88.97	540.58	5.78	8.268	6.076	10.25	7.00
15.3	26.30	51.60	83.58	457.65	5.79	8.869	5.475	7.73	5.25
14 x 6 x 30.6	49.09	81.34	97.10	634.92	5.59	7.805	6.539	14.44	10.50
25.5	41.17	70.91	92.22	575.01	5.65	8.109	6.235	12.11	8.75
20.4	33.15	59.52	87.18	507.40	5.69	8.524	5.820	9.75	7.00
15.3	25.02	47.03	81.94	428.58	5.68	9.114	5.230	7.36	5.25
14 x 5 x 30.6	46.54	73.17	94.64	591.89	5.49	8.090	6.254	13.69	10.50
25.5	39.05	63.85	89.95	535.63	5.55	8.389	5.955	11.48	8.75
20.4	31.45	53.66	85.10	472.03	5.58	8.797	5.547	9.25	7.00
15.3	23.75	42.44	80.03	397.83	5.55	9.373	4.971	6.98	5.25
14 x 4 x 30.6	43.99	64.96	91.71	545.45	5.38	8.396	5.948	12.94	10.50
25.5	36.92	56.77	87.25	493.32	5.42	8.690	5.654	10.86	8.75
20.4	29.75	47.78	82.62	434.25	5.44	9.088	5.256	8.75	7.00
15.3	22.47	37.86	77.78	365.24	5.40	9.648	4.696	6.61	5.25
13 x 9 x 30.6	54.19	93.40	96.19	632.33	5.38	6.574	6.770	15.94	9.75
25.5	45.42	83.77	88.86	575.37	5.46	6.869	6.475	13.36	8.12
20.4	36.55	70.21	84.17	510.81	5.54	7.275	6.069	10.75	6.50
15.3	27.57	55.35	79.30	434.97	5.57	7.859	5.485	8.11	4.87
13 x 8 x 30.6	51.64	88.67	91.98	602.45	5.34	6.794	6.550	15.19	9.75
25.5	43.30	77.25	87.54	547.58	5.42	7.088	6.256	12.73	8.12
20.4	34.85	64.78	82.94	485.35	5.48	7.492	5.852	10.25	6.50
15.3	26.30	51.09	78.17	412.29	5.50	8.069	5.275	7.73	4.87



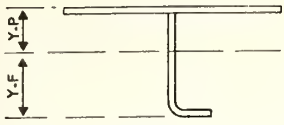
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
13 x 7 x 30.6	49.09	81.12	90.35	570.37	5.29	7.031	6.313	14.44	9.75
25.5	41.17	70.71	86.02	517.87	5.36	7.323	6.021	12.11	8.12
20.4	33.15	59.33	81.54	458.28	5.41	7.724	5.620	9.75	6.50
15.3	25.02	46.83	76.87	388.33	5.41	8.292	5.052	7.36	4.87
13 x 6 x 30.6	46.54	73.55	88.45	535.84	5.23	7.286	6.058	13.69	9.75
25.5	39.05	64.16	84.25	486.02	5.29	7.575	5.769	11.48	8.12
20.4	31.45	53.88	79.91	429.42	5.32	7.970	5.374	9.25	6.50
15.3	23.75	42.57	75.37	362.98	5.30	8.528	4.816	6.98	4.87
13 x 5 x 30.6	43.99	65.94	86.20	498.56	5.14	7.561	5.783	12.94	9.75
25.5	36.92	57.59	82.17	451.81	5.19	7.846	5.498	10.86	8.12
20.4	29.75	48.41	77.99	398.60	5.21	8.233	5.111	8.75	6.50
15.3	22.47	38.29	73.60	336.11	5.18	8.777	4.567	6.61	4.87
13 x 4 x 30.6	41.44	58.31	83.52	458.20	5.03	7.858	5.486	12.19	9.75
25.5	34.80	50.99	79.70	414.94	5.07	8.137	5.207	10.23	8.12
20.4	28.05	42.94	75.71	365.59	5.08	8.515	4.829	8.25	6.50
15.3	21.20	34.02	71.51	307.58	5.03	9.043	4.301	6.23	4.87
12 x 9 x 30.6	51.64	84.45	86.91	528.71	5.01	6.083	6.261	15.19	9.00
25.5	43.30	75.76	80.60	482.07	5.08	6.363	5.981	12.73	7.50
20.4	34.85	63.54	76.62	428.77	5.15	6.748	5.596	10.25	6.00
15.3	26.30	50.10	72.46	365.63	5.18	7.298	5.046	7.73	4.50
12 x 8 x 30.6	49.09	79.98	83.19	503.34	4.97	6.294	6.050	14.44	9.00
25.5	41.17	69.74	79.42	458.38	5.04	6.573	5.771	12.11	7.50
20.4	33.15	58.52	75.52	406.98	5.10	6.955	5.389	9.75	6.00
15.3	25.02	46.16	71.44	346.13	5.11	7.499	4.845	7.36	4.50
12 x 7 x 30.6	46.54	73.01	81.73	476.02	4.93	6.520	5.824	13.69	9.00
25.5	39.05	63.70	78.06	432.98	4.99	6.798	5.546	11.48	7.50
20.4	31.45	53.48	74.26	383.75	5.03	7.176	5.168	9.25	6.00
15.3	23.75	42.21	70.26	325.50	5.02	7.711	4.633	6.98	4.50
12 x 6 x 30.6	43.99	66.01	80.03	446.54	4.87	6.764	5.580	12.94	9.00
25.5	36.92	57.63	76.48	405.70	4.92	7.039	5.305	10.86	7.50
20.4	29.75	48.42	72.78	358.93	4.95	7.412	4.932	8.75	6.00
15.3	22.47	38.26	68.89	303.63	4.92	7.936	4.408	6.61	4.50
12 x 5 x 30.6	41.44	58.99	78.01	414.62	4.79	7.029	5.315	12.19	9.00
25.5	34.80	51.55	74.60	376.30	4.83	7.300	5.044	10.23	7.50
20.4	28.05	43.36	71.03	332.37	4.84	7.665	4.679	8.25	6.00
15.3	21.20	34.30	67.27	280.41	4.80	8.176	4.168	6.23	4.50
12 x 4 x 30.6	38.89	51.93	75.58	379.94	4.68	7.317	5.027	11.44	9.00
25.5	32.67	45.45	72.33	344.54	4.71	7.581	4.763	9.61	7.50
20.4	26.35	38.29	68.94	303.86	4.72	7.936	4.408	7.75	6.00
15.3	19.92	30.33	65.34	255.72	4.66	8.430	3.914	5.86	4.50
11 x 8 x 25.5	39.05	62.45	71.51	378.18	4.66	6.056	5.288	11.48	6.87
22.95	35.29	57.61	69.91	358.27	4.69	6.219	5.125	10.38	6.19
20.4	31.45	52.44	68.25	336.38	4.71	6.415	4.929	9.25	5.50
17.85	27.64	47.09	66.57	312.87	4.72	6.644	4.700	8.13	4.82
15.3	23.75	41.37	64.81	286.46	4.71	6.924	4.420	6.98	4.12
11 x 7 x 25.5	36.92	56.90	70.31	356.77	4.61	6.270	5.074	10.86	6.87
22.95	33.38	52.50	68.75	337.69	4.63	6.432	4.912	9.82	6.19
20.4	29.75	47.80	67.12	316.72	4.65	6.625	4.719	8.75	5.50
17.85	26.15	42.94	65.48	294.19	4.65	6.851	4.493	7.69	4.82
15.3	22.47	37.74	63.75	268.93	4.63	7.125	4.219	6.61	4.12
11 x 6 x 25.5	34.80	51.34	68.90	333.71	4.55	6.500	4.844	10.23	6.87
22.95	31.46	47.39	67.38	315.59	4.56	6.660	4.684	9.25	6.19
20.4	28.05	43.16	65.80	295.67	4.57	6.850	4.494	8.25	5.50



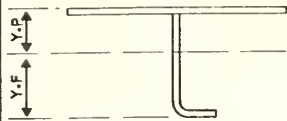
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
11 x 6 x 17.85,	24.66	38.79	64.20	274.28	4.56	7.071	4.273	7.25	4.82
15.3	21.20	34.10	62.51	250.32	4.54	7.340	4.004	6.23	4.12
11 x 5 x 25.5	32.67	45.75	67.21	308.80	4.46	6.749	4.595	9.61	6.87
22.95	29.55	42.25	65.75	291.79	4.47	6.906	4.438	8.69	6.19
20.4	26.35	38.51	64.22	273.08	4.47	7.092	4.252	7.75	5.50
17.85	23.17	34.62	62.67	253.00	4.46	7.307	4.037	6.82	4.82
15.3	19.92	30.46	61.04	230.52	4.42	7.567	3.777	5.86	4.12
11 x 4 x 25.5	30.55	40.15	65.16	281.80	4.35	7.019	4.325	8.98	6.87
22.95	27.64	37.10	63.77	266.07	4.35	7.172	4.172	8.13	6.19
20.4	24.65	33.84	62.31	248.78	4.35	7.352	3.992	7.25	5.50
17.85	21.69	30.45	60.83	230.20	4.33	7.560	3.784	6.38	4.82
15.3	18.65	26.81	59.26	209.42	4.29	7.810	3.534	5.48	4.12
10 x 8 x 25.5	36.92	55.38	63.80	306.66	4.28	5.538	4.806	10.86	6.25
22.95	33.38	51.11	62.49	290.83	4.30	5.690	4.654	9.82	5.63
20.4	29.75	46.54	61.13	273.32	4.32	5.873	4.471	8.75	5.00
17.85	26.15	41.81	59.74	254.42	4.32	6.085	4.259	7.69	4.38
15.3	22.47	36.74	58.28	233.09	4.31	6.344	4.000	6.61	3.75
10 x 7 x 25.5	34.80	50.34	62.75	288.92	4.23	5.740	4.604	10.23	6.25
22.95	31.46	46.47	61.47	273.73	4.25	5.891	4.453	9.25	5.63
20.4	28.05	42.32	60.13	256.95	4.26	6.071	4.273	8.25	5.00
17.85	24.66	38.03	58.77	238.84	4.26	6.280	4.064	7.25	4.38
15.3	21.20	33.43	57.34	218.43	4.24	6.534	3.810	6.23	3.75
10 x 6 x 25.5	32.67	45.27	61.51	269.75	4.17	5.958	4.386	9.61	6.25
22.95	29.55	41.81	60.26	255.32	4.18	6.107	4.237	8.69	5.63
20.4	26.35	38.09	58.96	239.38	4.19	6.284	4.060	7.75	5.00
17.85	23.17	34.24	57.63	222.18	4.18	6.489	3.855	6.82	4.38
15.3	19.92	30.11	56.23	202.84	4.15	6.737	3.607	5.86	3.75
10 x 5 x 25.5	30.55	40.19	60.01	248.97	4.09	6.195	4.149	8.98	6.25
22.95	27.64	37.13	58.81	235.43	4.09	6.341	4.003	8.13	5.63
20.4	24.65	33.85	57.55	220.47	4.09	6.513	3.831	7.25	5.00
17.85	21.69	30.44	56.27	204.34	4.08	6.712	3.632	6.38	4.38
15.3	18.65	26.79	54.90	186.22	4.04	6.952	3.392	5.48	3.75
10 x 4 x 25.5	28.42	35.08	58.17	226.38	3.98	6.453	3.891	8.36	6.25
22.95	25.72	32.44	57.03	213.88	3.98	6.594	3.750	7.57	5.63
20.4	22.95	29.59	55.83	200.07	3.97	6.760	3.584	6.75	5.00
17.85	20.20	26.64	54.60	185.19	3.95	6.952	3.392	5.94	4.38
15.3	17.37	23.46	53.28	168.47	3.91	7.182	3.162	5.11	3.75
9 x 6 x 25.5	30.55	39.44	54.30	213.49	3.79	5.413	3.931	8.98	5.62
20.4	24.65	33.22	52.26	189.78	3.80	5.713	3.631	7.25	4.50
15.3	18.65	26.27	50.04	160.98	3.76	6.127	3.217	5.48	3.37
10.2	12.54	18.50	47.47	124.40	3.60	6.723	2.621	3.69	2.25
9 x 5 x 25.5	28.42	34.87	52.99	196.50	3.71	5.636	3.708	8.36	5.62
20.4	22.95	29.40	51.02	174.27	3.71	5.928	3.416	6.75	4.50
15.3	17.37	23.27	48.85	147.30	3.66	6.329	3.015	5.11	3.37
10.2	11.69	16.41	46.32	113.23	3.48	6.900	2.444	3.44	2.25
9 x 4 x 25.5*,	26.30	30.27	51.37	177.96	3.61	5.880	3.464	7.73	5.62
20.4*,	21.25	25.56	49.48	157.47	3.60	6.162	3.182	6.25	4.50
15.3	16.10	20.27	47.39	132.65	3.53	6.545	2.799	4.73	3.37
10.2	10.84	14.32	44.91	101.44	3.34	7.086	2.258	3.19	2.25
8 x 6 x 25.5*,	28.42	33.85	47.29	164.61	3.40	4.863	3.481	8.36	5.00
20.4*,	22.95	28.55	45.70	146.63	3.40	5.135	3.209	6.75	4.00
15.3	17.37	22.60	43.93	124.52	3.36	5.510	2.834	5.11	3.00
10.2	11.69	15.92	41.82	96.21	3.21	6.043	2.301	3.44	2.00

*Indicates similarity to (L) shape.



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

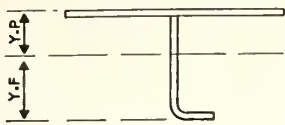
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STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
8 x 5 x 25.5	26.30	29.79	46.16	151.05	3.33	5.071	3.273	7.73	5.00
20.4	21.25	25.15	44.62	134.19	3.32	5.336	3.008	6.25	4.00
15.3	16.10	19.93	42.89	113.52	3.27	5.697	2.647	4.73	3.00
10.2	10.84	14.05	40.79	87.21	3.10	6.206	2.138	3.19	2.00
8 x 4 x 25.5*	24.17	25.70	44.74	136.20	3.23	5.300	3.044	7.11	5.00
20.4*	19.55	21.73	43.26	120.69	3.22	5.554	2.790	5.75	4.00
15.3	14.82	17.25	41.59	101.72	3.15	5.898	2.446	4.36	3.00
10.2	9.99	12.18	39.52	77.71	2.96	6.377	1.967	2.94	2.00

*Indicates similarity to (L) shape.



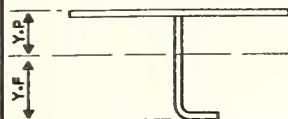
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 24 x 30.6	120.49	260.56	426.39	3,942.16	9.63	9.245	15.130	35.44	18.00
25.5	100.67	242.40	368.04	3,562.28	9.86	9.679	14.696	29.61	15.00
20.4	80.75	224.01	306.19	3,153.30	10.12	10.299	14.076	23.75	12.00
17.85	70.83	214.80	273.99	2,934.89	10.26	10.712	13.663	20.83	10.51
24 x 22 x 30.6	115.39	258.01	399.13	3,819.74	9.66	9.570	14.805	33.94	18.00
25.5	96.42	240.07	344.53	3,448.70	9.87	10.010	14.365	28.36	15.00
20.4	77.35	221.92	286.66	3,048.91	10.12	10.636	13.739	22.75	12.00
17.85	67.85	212.82	256.53	2,835.30	10.25	11.052	13.323	19.96	10.51
24 x 20 x 30.6	110.29	255.13	371.79	3,688.02	9.67	9.920	14.455	32.44	18.00
25.5	92.17	237.46	320.97	3,326.81	9.87	10.365	14.010	27.11	15.00
20.4	73.95	219.56	267.10	2,937.27	10.10	10.997	13.378	21.75	12.00
17.85	64.87	210.59	239.06	2,729.03	10.22	11.416	12.959	19.08	10.51
24 x 18 x 30.6	105.19	251.87	344.37	3,545.90	9.66	10.297	14.078	30.94	18.00
25.5	87.92	234.49	297.35	3,195.65	9.86	10.747	13.628	25.86	15.00
20.4	70.55	216.88	247.51	2,817.60	10.07	11.384	12.991	20.75	12.00
17.85	61.89	208.06	221.56	2,615.38	10.18	11.805	12.570	18.20	10.51
24 x 16 x 30.6	100.09	248.14	316.87	3,392.10	9.64	10.705	13.670	29.44	18.00
25.5	83.67	231.10	273.69	3,054.14	9.82	11.159	13.216	24.61	15.00
20.4	67.15	213.83	227.89	2,688.99	10.02	11.800	12.575	19.75	12.00
17.85	58.92	204.04	205.17	2,493.56	10.12	12.221	12.154	17.33	10.51
24 x 14 x 30.6	94.99	243.83	289.30	3,225.10	9.60	11.148	13.227	27.94	18.00
25.5	79.42	227.18	249.97	2,900.98	9.77	11.605	12.770	23.36	15.00
20.4	63.75	208.24	210.30	2,550.40	9.95	12.248	12.127	18.75	12.00
17.85	55.94	186.49	201.83	2,362.65	10.03	12.669	11.706	16.45	10.51
24 x 12 x 30.6	89.89	238.79	261.64	3,043.14	9.54	11.631	12.744	26.44	18.00
25.5	75.17	222.60	226.20	2,734.69	9.69	12.090	12.285	22.11	15.00
20.4	60.35	188.56	206.18	2,400.63	9.84	12.732	11.643	17.75	12.00
17.85	52.96	168.92	197.94	2,221.59	9.91	13.151	11.224	15.58	10.51
24 x 10 x 30.6	84.79	232.82	233.91	2,844.11	9.43	12.159	12.216	24.94	18.00
25.5	70.92	202.37	217.18	2,553.50	9.57	12.618	11.757	20.86	15.00
20.4	56.95	168.84	201.31	2,238.27	9.70	13.257	11.118	16.75	12.00
17.85	49.98	151.34	193.34	2,069.16	9.76	13.673	10.702	14.70	10.51
24 x 8 x 30.6	79.69	206.10	225.64	2,625.49	9.28	12.739	11.636	23.44	18.00
25.5	66.67	178.50	210.67	2,355.30	9.40	13.195	11.180	19.61	15.00
20.4	53.55	149.10	195.46	2,061.65	9.51	13.828	10.547	15.75	12.00
17.85	47.00	133.72	187.82	1,903.93	9.55	14.238	10.137	13.82	10.51
24 x 6 x 30.6	74.59	178.20	216.84	2,384.24	9.07	13.379	10.996	21.94	18.00
25.5	62.42	154.57	202.70	2,137.60	9.18	13.829	10.546	18.36	15.00
20.4	50.15	129.32	188.31	1,868.81	9.26	14.451	9.924	14.75	12.00
17.85	44.02	116.09	181.07	1,724.21	9.29	14.853	9.522	12.95	10.51
21 x 20 x 30.6	102.64	213.27	317.27	2,726.13	8.56	8.592	12.783	30.19	15.75
25.5	85.80	199.69	274.25	2,469.95	8.75	9.006	12.369	25.23	13.12
20.4	68.85	185.91	228.40	2,190.66	8.96	9.591	11.784	20.25	10.50
17.85	60.40	178.98	204.44	2,039.90	9.07	9.978	11.397	17.77	9.20
21 x 18 x 30.6	97.54	210.70	293.20	2,620.52	8.57	8.938	12.437	28.69	15.75
25.5	81.55	197.33	253.47	2,371.63	8.74	9.356	12.019	23.98	13.12
20.4	65.45	183.76	211.13	2,100.06	8.94	9.947	11.428	19.25	10.50
17.85	57.43	176.94	189.00	1,953.41	9.04	10.335	11.040	16.89	9.20
21 x 16 x 30.6	92.44	207.73	269.05	2,505.65	8.56	9.313	12.062	27.19	15.75
25.5	77.30	194.61	232.64	2,265.05	8.72	9.736	11.639	22.73	13.12
20.4	62.05	181.29	193.83	2,002.29	8.90	10.330	11.045	18.25	10.50
17.85	54.45	173.54	174.60	1,860.33	8.98	10.720	10.655	16.01	9.20



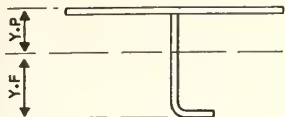
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 14 x 30.6	87.34	204.27	244.81	2,380.26	8.53	9.723	11.652	25.69	15.75
25.5	73.05	191.45	211.75	2,149.14	8.68	10.149	11.226	21.48	13.12
20.4	58.65	176.49	178.42	1,896.47	8.84	10.746	10.629	17.25	10.50
17.85	51.47	158.05	171.86	1,759.91	8.91	11.135	10.240	15.14	9.20
21 x 12 x 30.6	82.24	200.20	220.49	2,242.82	8.48	10.172	11.203	24.19	15.75
25.5	68.80	187.72	190.80	2,022.59	8.61	10.600	10.775	20.23	13.12
20.4	55.25	159.12	175.03	1,781.56	8.75	11.196	10.179	16.25	10.50
17.85	48.49	142.54	168.65	1,651.22	8.81	11.584	9.791	14.26	9.20
21 x 10 x 30.6	77.14	195.31	196.09	2,091.52	8.39	10.666	10.709	22.69	15.75
25.5	64.55	169.80	183.25	1,883.90	8.51	11.095	10.280	18.98	13.12
20.4	51.85	141.72	170.98	1,656.34	8.62	11.688	9.687	15.25	10.50
17.85	45.51	127.01	164.80	1,533.21	8.67	12.072	9.303	13.39	9.20
21 x 8 x 30.6	72.04	171.59	189.35	1,924.13	8.26	11.213	10.162	21.19	15.75
25.5	60.30	148.74	177.81	1,731.20	8.36	11.639	9.736	17.73	13.12
20.4	48.45	124.28	166.05	1,519.35	8.45	12.225	9.150	14.25	10.50
17.85	42.53	111.45	160.12	1,404.61	8.48	12.603	8.772	12.51	9.20
21 x 6 x 30.6	66.94	147.01	181.93	1,737.96	8.07	11.822	9.553	19.69	15.75
25.5	56.05	127.63	171.04	1,562.27	8.15	12.241	9.134	16.48	13.12
20.4	45.05	106.81	159.93	1,368.86	8.22	12.816	8.559	13.25	10.50
17.85	39.56	95.87	154.31	1,263.95	8.23	13.184	8.191	11.63	9.20
18 x 18 x 30.6	89.89	172.05	244.07	1,854.26	7.44	7.597	10.778	26.44	13.50
25.5	75.17	162.22	211.32	1,686.33	7.61	7.980	10.395	22.11	11.25
20.4	60.35	152.22	176.17	1,500.55	7.78	8.517	9.858	17.75	9.00
15.3	45.42	138.22	142.00	1,287.00	7.94	9.311	9.064	13.36	6.75
18 x 16 x 30.6	84.79	169.78	223.32	1,772.28	7.45	7.936	10.439	24.94	13.50
25.5	70.92	160.13	193.37	1,609.51	7.60	8.324	10.051	20.86	11.25
20.4	56.95	150.30	161.23	1,429.30	7.75	8.865	9.510	16.75	9.00
15.3	42.87	126.52	140.24	1,222.18	7.89	9.660	8.715	12.61	6.75
18 x 14 x 30.6	79.69	167.11	202.47	1,682.23	7.43	8.308	10.067	23.44	13.50
25.5	66.67	157.66	175.35	1,525.48	7.57	8.700	9.675	19.61	11.25
20.4	53.55	146.25	148.03	1,351.80	7.70	9.243	9.132	15.75	9.00
15.3	40.32	114.81	138.17	1,152.20	7.81	10.036	8.339	11.86	6.75
18 x 12 x 30.6	74.59	163.93	181.54	1,582.86	7.39	8.719	9.656	21.94	13.50
25.5	62.42	154.73	157.28	1,433.18	7.51	9.112	9.263	18.36	11.25
20.4	50.15	131.23	145.34	1,267.19	7.63	9.656	8.719	14.75	9.00
15.3	37.77	103.08	135.71	1,076.44	7.70	10.443	7.932	11.11	6.75
18 x 10 x 30.6	69.49	160.07	160.51	1,472.65	7.32	9.175	9.200	20.44	13.50
25.5	58.17	139.14	151.17	1,331.33	7.43	9.568	8.807	17.11	11.25
20.4	46.75	116.18	142.08	1,174.43	7.52	10.109	8.266	13.75	9.00
15.3	35.22	91.33	132.74	994.15	7.56	10.885	7.490	10.36	6.75
18 x 8 x 30.6	64.39	139.39	155.29	1,349.71	7.21	9.683	8.692	18.94	13.50
25.5	53.92	120.94	146.77	1,218.35	7.30	10.074	8.301	15.86	11.25
20.4	43.35	101.09	138.05	1,072.30	7.36	10.607	7.768	12.75	9.00
15.3	32.67	79.56	129.07	904.43	7.37	11.368	7.007	9.61	6.75
18 x 6 x 30.6	59.29	118.17	149.20	1,211.70	7.04	10.254	8.121	17.44	13.50
25.5	49.67	102.69	141.17	1,092.33	7.10	10.637	7.738	14.61	11.25
20.4	39.95	85.97	132.94	959.30	7.15	11.159	7.216	11.75	9.00
15.3	30.12	67.78	124.43	806.25	7.12	11.895	6.480	8.86	6.75
18 x 4 x 30.6	54.19	96.86	141.21	1,055.68	6.78	10.899	7.476	15.94	13.50
25.5	45.42	84.37	133.84	950.87	6.83	11.270	7.105	13.36	11.25
20.4	36.55	70.81	126.25	833.58	6.85	11.772	6.603	10.75	9.00
15.3	27.57	55.98	118.37	698.35	6.79	12.475	5.900	8.11	6.75



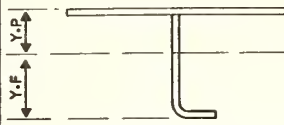
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
16 x 12 x 30.6	69.49	141.05	156.78	1,215.85	6.65	7.755	8.620	20.44	12.00
25.5	58.17	133.79	135.96	1,104.23	6.76	8.122	8.253	17.11	10.00
20.4	46.75	113.50	126.35	979.10	6.86	8.626	7.749	13.75	8.00
15.3	35.22	89.14	118.69	833.59	6.92	9.352	7.023	10.36	6.00
16 x 10 x 30.6	64.39	137.84	138.04	1,129.36	6.59	8.181	8.194	18.94	12.00
25.5	53.92	119.77	130.80	1,023.79	6.69	8.548	7.827	15.86	10.00
20.4	43.35	100.05	123.59	905.37	6.77	9.050	7.325	12.75	8.00
15.3	32.67	78.62	116.15	767.75	6.79	9.765	6.610	9.61	6.00
16 x 8 x 30.6	59.29	119.20	133.80	1,032.27	6.50	8.660	7.715	17.44	12.00
25.5	49.67	103.51	127.06	934.08	6.57	9.024	7.351	14.61	10.00
20.4	39.95	86.55	120.14	823.79	6.62	9.518	6.857	11.75	8.00
15.3	30.12	68.09	112.97	695.70	6.62	10.217	6.158	8.86	6.00
16 x 6 x 30.6	54.19	100.26	128.59	922.51	6.34	9.201	7.174	15.94	12.00
25.5	45.42	87.19	122.24	833.36	6.39	9.558	6.817	13.36	10.00
20.4	36.55	73.02	115.70	733.04	6.42	10.039	6.336	10.75	8.00
15.3	27.57	57.54	108.90	616.51	6.38	10.714	5.661	8.11	6.00
16 x 4 x 30.6	49.09	81.22	121.61	797.43	6.09	9.818	6.557	14.44	12.00
25.5	41.17	70.81	115.80	719.50	6.13	10.162	6.213	12.11	10.00
20.4	33.15	59.45	109.78	631.48	6.13	10.623	5.752	9.75	8.00
15.3	25.02	46.98	103.48	529.07	6.06	11.262	5.113	7.36	6.00
15 x 12 x 30.6	66.94	130.01	144.76	1,053.10	6.28	7.275	8.100	19.69	11.25
25.5	56.05	123.64	125.62	958.01	6.38	7.627	7.748	16.48	9.37
20.4	45.05	104.90	117.10	850.74	6.48	8.110	7.265	13.25	7.50
15.3	33.95	82.38	110.35	725.18	6.53	8.803	6.572	9.98	5.62
15 x 11 x 30.6	64.39	128.63	135.98	1,016.33	6.26	7.474	7.901	18.94	11.25
25.5	53.92	118.02	122.36	923.64	6.35	7.826	7.549	15.86	9.37
20.4	43.35	98.58	115.91	819.06	6.43	8.309	7.066	12.75	7.50
15.3	32.67	77.44	109.24	696.71	6.47	8.997	6.378	9.61	5.62
15 x 10 x 30.6	61.84	127.10	127.18	977.37	6.23	7.685	7.690	18.19	11.25
25.5	51.80	110.41	120.93	887.34	6.31	8.037	7.338	15.23	9.37
20.4	41.65	92.25	114.58	785.74	6.38	8.518	6.857	12.25	7.50
15.3	31.40	72.49	108.01	666.93	6.40	9.200	6.175	9.23	5.62
15 x 9 x 30.6	59.29	118.35	125.37	936.03	6.19	7.909	7.466	17.44	11.25
25.5	49.67	102.78	119.32	848.95	6.26	8.260	7.115	14.61	9.37
20.4	39.95	85.91	113.10	750.64	6.32	8.738	6.637	11.75	7.50
15.3	30.12	67.54	106.63	635.74	6.33	9.413	5.962	8.86	5.62
15 x 8 x 30.6	56.74	109.49	123.43	892.08	6.13	8.147	7.228	16.69	11.25
25.5	47.55	95.13	117.51	808.28	6.20	8.497	6.878	13.98	9.37
20.4	38.25	79.56	111.42	713.62	6.25	8.970	6.405	11.25	7.50
15.3	28.85	62.58	105.08	603.05	6.23	9.636	5.739	8.48	5.62
15 x 7 x 30.6	54.19	100.61	121.20	845.26	6.07	8.401	6.974	15.94	11.25
25.5	45.42	87.47	115.45	765.11	6.13	8.748	6.627	13.36	9.37
20.4	36.55	73.20	109.50	674.53	6.16	9.215	6.160	10.75	7.50
15.3	27.57	57.62	103.32	568.74	6.13	9.870	5.505	8.11	5.62
15 x 6 x 30.6	51.64	91.71	118.65	795.28	5.98	8.672	6.703	15.19	11.25
25.5	43.30	79.79	113.07	719.22	6.03	9.014	6.361	12.73	9.37
20.4	34.85	66.83	107.31	633.17	6.05	9.475	5.900	10.25	7.50
15.3	26.30	52.66	101.29	532.68	6.01	10.116	5.259	7.73	5.62
15 x 5 x 30.6	49.09	82.77	115.67	741.81	5.88	8.962	6.413	14.44	11.25
25.5	41.17	72.09	110.31	670.33	5.92	9.298	6.077	12.11	9.37
20.4	33.15	60.45	104.76	589.34	5.93	9.749	5.626	9.75	7.50
15.3	25.02	47.69	98.95	494.75	5.86	10.375	5.000	7.36	5.62

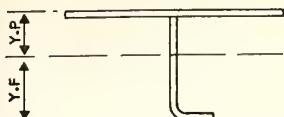


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 4 x 30.6	46.54	73.81	112.17	684.47	5.75	9.273	6.102	13.69	11.25
25.5	39.05	64.38	107.07	618.14	5.78	9.602	5.773	11.48	9.37
20.4	31.45	54.06	101.77	542.82	5.77	10.041	5.334	9.25	7.50
15.3	23.75	42.71	96.20	454.79	5.70	10.647	4.728	6.98	5.62
14 x 10 x 30.6	59.29	116.57	116.61	838.00	5.85	7.189	7.186	17.44	10.50
25.5	49.67	101.26	111.25	762.02	5.93	7.526	6.849	14.61	8.75
20.4	39.95	84.63	105.73	675.71	6.00	7.984	6.391	11.75	7.00
15.3	30.12	66.50	99.98	574.10	6.01	8.633	5.742	8.86	5.25
14 x 9 x 30.6	56.74	108.32	115.06	802.04	5.82	7.404	6.971	16.69	10.50
25.5	47.55	94.12	109.80	728.52	5.89	7.740	6.635	13.98	8.75
20.4	38.25	78.70	104.38	644.97	5.94	8.196	6.179	11.25	7.00
15.3	28.85	61.86	98.72	546.70	5.94	8.837	5.538	8.48	5.25
14 x 8 x 30.6	54.19	100.05	113.29	763.74	5.77	7.634	6.741	15.94	10.50
25.5	45.42	86.97	108.15	692.96	5.83	7.968	6.407	13.36	8.75
20.4	36.55	72.75	102.84	612.51	5.87	8.419	5.956	10.75	7.00
15.3	27.57	57.22	97.29	517.95	5.85	9.051	5.324	8.11	5.25
14 x 7 x 30.6	51.64	91.75	111.27	722.85	5.70	7.879	6.496	15.19	10.50
25.5	43.30	79.80	106.27	655.15	5.76	8.210	6.165	12.73	8.75
20.4	34.85	66.80	101.09	578.17	5.78	8.655	5.720	10.25	7.00
15.3	26.30	52.58	95.66	487.73	5.75	9.276	5.099	7.73	5.25
14 x 6 x 30.6	49.09	83.42	108.94	679.11	5.62	8.141	6.234	14.44	10.50
25.5	41.17	72.61	104.09	614.88	5.67	8.468	5.907	12.11	8.75
20.4	33.15	60.83	99.06	541.78	5.68	8.906	5.469	9.75	7.00
15.3	25.02	47.93	93.78	455.94	5.63	9.513	4.862	7.36	5.25
14 x 5 x 30.6	46.54	75.06	106.20	632.20	5.52	8.422	5.953	13.69	10.50
25.5	39.05	65.41	101.54	571.88	5.56	8.743	5.632	11.48	8.75
20.4	31.45	54.86	96.70	503.15	5.56	9.172	5.203	9.25	7.00
15.3	23.75	43.27	91.59	422.45	5.49	9.763	4.612	6.98	5.25
14 x 4 x 30.6	43.99	66.68	102.96	581.78	5.40	8.724	5.651	12.94	10.50
25.5	36.92	58.19	98.53	525.89	5.42	9.038	5.337	10.86	8.75
20.4	29.75	48.87	93.91	462.08	5.41	9.454	4.921	8.75	7.00
15.3	22.47	38.61	89.02	387.12	5.33	10.026	4.349	6.61	5.25
13 x 9 x 30.6	54.19	98.55	104.99	679.91	5.44	6.899	6.476	15.94	9.75
25.5	45.42	85.69	100.48	618.57	5.51	7.219	6.156	13.36	8.12
20.4	36.55	71.67	95.80	548.37	5.55	7.651	5.724	10.75	6.50
15.3	27.57	56.34	90.90	465.23	5.54	8.257	5.118	8.11	4.87
13 x 8 x 30.6	51.64	90.86	103.41	646.87	5.40	7.119	6.256	15.19	9.75
25.5	43.30	79.03	98.99	587.79	5.45	7.437	5.938	12.73	8.12
20.4	34.85	66.14	94.41	520.18	5.49	7.865	5.510	10.25	6.50
15.3	26.30	52.02	89.60	440.19	5.46	8.462	4.913	7.73	4.87
13 x 7 x 30.6	49.09	83.14	101.58	611.53	5.34	7.355	6.020	14.44	9.75
25.5	41.17	72.36	97.28	555.01	5.39	7.670	5.705	12.11	8.12
20.4	33.15	60.59	92.81	490.31	5.41	8.092	5.283	9.75	6.50
15.3	25.02	47.69	88.10	413.84	5.36	8.678	4.697	7.36	4.87
13 x 6 x 30.6	46.54	75.40	99.46	573.63	5.26	7.608	5.767	13.69	9.75
25.5	39.05	65.67	95.30	520.02	5.30	7.918	5.457	11.48	8.12
20.4	31.45	55.04	90.96	458.61	5.31	8.333	5.042	9.25	6.50
15.3	23.75	43.36	86.37	386.08	5.25	8.905	4.470	6.98	4.87
13 x 5 x 30.6	43.99	67.63	96.97	532.89	5.17	7.879	5.496	12.94	9.75
25.5	36.92	58.97	92.96	482.58	5.19	8.184	5.191	10.86	8.12
20.4	29.75	49.47	88.78	424.90	5.19	8.589	4.786	8.75	6.50
15.3	22.47	39.02	84.34	356.79	5.11	9.145	4.230	6.61	4.87

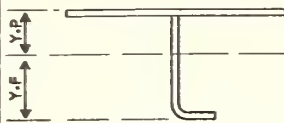


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
13 x 4 x 30.6	41.44	59.83	93.98	488.97	5.04	8.172	5.203	12.19	9.75
25.5	34.80	52.24	90.18	442.43	5.06	8.469	4.906	10.23	8.12
20.4	28.05	43.89	86.19	388.98	5.05	8.862	4.513	8.25	6.50
15.3	21.20	34.67	81.93	325.85	4.96	9.398	3.977	6.23	4.87
12 x 9 x 30.6	51.64	89.03	95.17	569.26	5.06	6.394	5.981	15.19	9.00
25.5	43.30	77.48	91.35	518.79	5.12	6.696	5.679	12.73	7.50
20.4	34.85	64.84	87.38	460.59	5.16	7.104	5.271	10.25	6.00
15.3	26.30	50.97	83.19	391.12	5.15	7.673	4.702	7.73	4.50
12 x 8 x 30.6	49.09	81.94	93.76	541.10	5.02	6.604	5.771	14.44	9.00
25.5	41.17	71.33	90.02	492.47	5.07	6.905	5.470	12.11	7.50
20.4	33.15	59.71	86.13	436.39	5.10	7.308	5.067	9.75	6.00
15.3	25.02	46.97	82.00	369.56	5.07	7.868	4.507	7.36	4.50
12 x 7 x 30.6	46.54	74.81	92.13	510.92	4.97	6.829	5.546	13.69	9.00
25.5	39.05	65.16	88.49	464.38	5.01	7.127	5.248	11.48	7.50
20.4	31.45	54.58	84.68	410.71	5.02	7.525	4.850	9.25	6.00
15.3	23.75	42.96	80.64	346.84	4.97	8.074	4.301	6.98	4.50
12 x 6 x 30.6	43.99	67.66	90.22	478.46	4.90	7.072	5.303	12.94	9.00
25.5	36.92	58.97	86.69	434.32	4.93	7.365	5.010	10.86	7.50
20.4	29.75	49.44	82.99	383.40	4.93	7.755	4.620	8.75	6.00
15.3	22.47	38.94	79.05	322.87	4.87	8.291	4.084	6.61	4.50
12 x 5 x 30.6	41.44	60.48	87.96	443.48	4.80	7.333	5.042	12.19	9.00
25.5	34.80	52.76	84.57	402.08	4.83	7.620	4.755	10.23	7.50
20.4	28.05	44.28	81.00	354.30	4.82	8.001	4.374	8.25	6.00
15.3	21.20	34.92	77.18	297.55	4.74	8.520	3.855	6.23	4.50
12 x 4 x 30.6	38.89	53.27	85.24	405.66	4.69	7.616	4.759	11.44	9.00
25.5	32.67	46.54	82.02	367.43	4.70	7.895	4.480	9.61	7.50
20.4	26.35	39.12	78.61	323.23	4.68	8.263	4.112	7.25	6.00
15.3	19.92	30.90	74.94	270.75	4.58	8.762	3.613	5.86	4.50
11 x 8 x 25.5	39.05	63.85	81.25	406.68	4.69	6.370	5.005	11.48	6.87
22.95	35.29	58.83	79.65	384.90	4.70	6.543	4.832	10.38	6.19
20.4	31.45	53.48	77.99	360.88	4.71	6.748	4.627	9.25	5.50
17.85	27.64	47.96	76.29	334.98	4.70	6.984	4.391	8.13	4.82
15.3	23.75	42.07	74.50	305.86	4.67	7.270	4.105	6.98	4.12
11 x 7 x 25.5	36.92	58.18	79.88	382.92	4.63	6.581	4.794	10.86	6.87
22.95	33.38	53.62	78.32	362.08	4.64	6.752	4.623	9.82	6.19
20.4	29.75	48.77	76.69	339.09	4.64	6.954	4.421	8.75	5.50
17.85	26.15	43.74	75.03	314.33	4.62	7.186	4.189	7.69	4.82
15.3	22.47	38.39	73.27	286.53	4.58	7.464	3.911	6.61	4.12
11 x 6 x 25.5	34.80	52.50	78.27	357.45	4.55	6.808	4.567	10.23	6.87
22.95	31.46	48.41	76.76	337.68	4.55	6.976	4.399	9.25	6.19
20.4	28.05	44.04	75.17	315.87	4.55	7.173	4.202	8.25	5.50
17.85	24.66	39.52	73.55	292.42	4.52	7.399	3.976	7.25	4.82
15.3	21.20	34.69	71.82	266.11	4.48	7.670	3.705	6.23	4.12
11 x 5 x 25.5	32.67	46.80	76.36	330.07	4.45	7.052	4.323	9.61	6.87
22.95	29.55	43.17	74.90	311.53	4.45	7.216	4.159	8.69	6.19
20.4	26.35	39.30	73.36	291.09	4.44	7.407	3.968	7.75	5.50
17.85	23.17	35.29	71.79	269.11	4.41	7.626	3.749	6.82	4.82
15.3	19.92	31.00	70.11	244.50	4.36	7.888	3.487	5.86	4.12
11 x 4 x 25.5	30.55	41.09	74.03	300.55	4.33	7.315	4.060	8.98	6.87
22.95	27.64	37.93	72.64	283.44	4.32	7.473	3.902	8.13	6.19
20.4	24.65	34.55	71.17	264.57	4.30	7.658	3.717	7.25	5.50
17.85	21.69	31.05	69.66	244.29	4.27	7.868	3.507	6.38	4.82
15.3	18.65	27.29	68.04	221.59	4.21	8.118	3.257	5.48	4.12



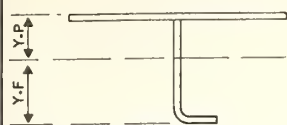
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

50t

STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 8 x 25.5	36.92	56.60	72.67	330.09	4.30	5.832	4.543	10.86	6.25
22.95	33.38	52.17	71.36	312.68	4.31	5.993	4.382	9.82	5.63
20.4	29.75	47.45	69.99	293.37	4.31	6.183	4.192	8.75	5.00
17.85	26.15	42.56	68.59	272.48	4.30	6.402	3.973	7.69	4.38
15.3	22.47	37.34	67.09	248.88	4.27	6.665	3.710	6.61	3.75
10 x 7 x 25.5	34.80	51.45	71.46	310.34	4.24	6.032	4.343	10.23	6.25
22.95	31.46	47.44	70.18	293.66	4.25	6.191	4.184	9.25	5.63
20.4	28.05	43.15	68.84	275.19	4.24	6.377	3.998	8.25	5.00
17.85	24.66	38.72	67.46	255.21	4.23	6.592	3.783	7.25	4.38
15.3	21.20	33.98	65.98	232.69	4.19	6.848	3.527	6.23	3.75
10 x 6 x 25.5	32.67	46.28	70.04	289.10	4.17	6.247	4.128	9.61	6.25
22.95	29.55	42.68	68.79	273.28	4.17	6.402	3.973	8.69	5.63
20.4	26.35	38.84	67.48	255.77	4.16	6.585	3.790	7.75	5.00
17.85	23.17	34.87	66.13	236.85	4.14	6.793	3.582	6.82	4.38
15.3	19.92	30.61	64.68	215.57	4.09	7.042	3.333	5.86	3.75
10 x 5 x 25.5	30.55	41.09	68.32	266.21	4.08	6.479	3.896	8.98	6.25
22.95	27.64	37.92	67.12	251.39	4.07	6.630	3.745	8.13	5.63
20.4	24.65	34.52	65.85	234.99	4.06	6.806	3.569	7.25	5.00
17.85	21.69	31.01	64.54	217.30	4.03	7.008	3.367	6.38	4.38
15.3	18.65	27.24	63.13	197.41	3.97	7.248	3.127	5.48	3.75
10 x 4 x 25.5	28.42	35.88	66.23	241.46	3.96	6.729	3.646	8.36	6.25
22.95	25.72	33.14	65.08	227.81	3.95	6.875	3.500	7.57	5.63
20.4	22.95	30.20	63.86	212.71	3.93	7.044	3.331	6.75	5.00
17.85	20.20	27.14	62.60	196.42	3.89	7.237	3.138	5.94	4.38
15.3	17.37	23.86	61.23	178.14	3.83	7.466	2.909	5.11	3.75



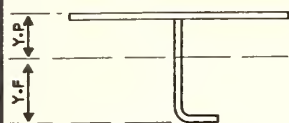
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

50t

STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	369.85	557.74	6,101.77	11.10	10.940	16.498	39.94	20.25
25.5	113.42	346.74	480.37	5,525.41	11.34	11.502	15.936	33.36	16.87
20.4	90.95	323.34	398.55	4,898.06	11.61	12.290	15.148	26.75	13.50
17.85	79.76	311.62	356.05	4,559.60	11.75	12.806	14.632	23.46	11.83
27 x 24 x 30.6	128.14	365.02	510.23	5,838.56	11.11	11.443	15.995	37.69	20.25
25.5	107.05	342.30	439.50	5,279.86	11.34	12.013	15.425	31.48	16.87
20.4	85.85	319.29	364.71	4,671.23	11.58	12.808	14.630	25.25	13.50
17.85	75.30	307.76	325.86	4,342.78	11.70	13.327	14.111	22.15	11.83
27 x 21 x 30.6	120.49	359.35	462.57	5,549.05	11.10	11.996	15.442	35.44	20.25
25.5	100.67	337.09	398.54	5,010.81	11.31	12.573	14.865	29.61	16.87
20.4	80.75	314.54	330.81	4,424.00	11.52	13.373	14.065	23.75	13.50
17.85	70.83	295.63	303.24	4,107.24	11.62	13.893	13.545	20.83	11.83
27 x 18 x 30.6	112.84	352.59	414.77	5,229.10	11.06	12.607	14.831	33.19	20.25
25.5	94.30	330.88	357.48	4,714.74	11.24	13.189	14.249	27.73	16.87
20.4	75.65	296.86	308.88	4,153.48	11.42	13.991	13.447	22.25	13.50
17.85	66.36	265.35	297.85	3,850.42	11.50	14.511	12.927	19.52	11.83
27 x 15 x 30.6	105.19	344.39	366.81	4,873.64	10.97	13.286	14.152	30.94	20.25
25.5	87.92	316.32	323.36	4,387.36	11.12	13.870	13.568	25.86	16.87
20.4	70.55	262.85	302.04	3,856.21	11.27	14.671	12.767	20.75	13.50
17.85	61.89	235.04	291.33	3,569.33	11.33	15.186	12.252	18.20	11.83
27 x 12 x 30.6	97.54	318.71	334.24	4,476.40	10.81	14.045	13.393	28.69	20.25
25.5	81.55	275.07	314.06	4,023.42	10.95	14.627	12.811	23.98	16.87
20.4	65.45	228.78	293.58	3,528.02	11.06	15.421	12.017	19.25	13.50
17.85	57.43	204.68	283.28	3,260.34	11.10	15.929	11.509	16.89	11.83
27 x 9 x 30.6	89.89	270.46	321.37	4,029.56	10.58	14.899	12.539	26.44	20.25
25.5	75.17	233.71	302.27	3,616.44	10.68	15.474	11.964	22.11	16.87
20.4	60.35	194.66	282.86	3,163.82	10.76	16.253	11.185	17.75	13.50
17.85	52.96	174.28	273.10	2,919.09	10.77	16.749	10.689	15.58	11.83
27 x 6 x 30.6	82.24	222.05	304.47	3,523.20	10.21	15.867	11.571	24.19	20.25
25.5	68.80	192.26	286.83	3,158.28	10.29	16.427	11.011	20.23	16.87
20.4	55.25	160.48	268.85	2,757.34	10.33	17.182	10.256	16.25	13.50
17.85	48.49	143.84	259.79	2,540.24	10.32	17.660	9.778	14.26	11.83
24 x 24 x 30.6	120.49	313.18	444.46	4,489.82	9.99	10.102	14.336	35.44	18.00
25.5	100.67	295.15	383.12	4,074.23	10.19	10.634	13.804	29.61	15.00
20.4	80.75	276.87	318.01	3,617.03	10.42	11.374	13.064	23.75	12.00
17.85	70.83	267.69	284.10	3,368.19	10.52	11.856	12.582	20.83	10.51
24 x 22 x 30.6	115.39	310.18	416.12	4,342.94	9.99	10.437	14.001	33.94	18.00
25.5	96.42	292.39	358.72	3,936.63	10.18	10.974	13.464	28.36	15.00
20.4	77.35	274.33	297.78	3,489.44	10.39	11.718	12.720	22.75	12.00
17.85	67.85	265.26	266.05	3,246.04	10.48	12.201	12.237	19.96	10.51
24 x 20 x 30.6	110.29	306.82	387.70	4,185.59	9.98	10.796	13.642	32.44	18.00
25.5	92.17	289.27	334.26	3,789.66	10.16	11.337	13.101	27.11	15.00
20.4	73.95	271.47	277.53	3,353.70	10.34	12.084	12.354	21.75	12.00
17.85	64.87	247.99	262.52	3,116.43	10.43	12.567	11.871	19.08	10.51
24 x 18 x 30.6	105.19	302.99	359.21	4,016.60	9.96	11.182	13.256	30.94	18.00
25.5	87.92	285.74	309.76	3,632.32	10.12	11.726	12.712	25.86	15.00
20.4	70.55	257.26	268.22	3,209.02	10.28	12.474	11.964	20.75	12.00
17.85	61.89	229.91	259.42	2,978.64	10.35	12.956	11.482	18.20	10.51
24 x 16 x 30.6	100.09	298.62	330.66	3,834.62	9.91	11.597	12.841	29.44	18.00
25.5	83.67	281.71	285.22	3,463.49	10.06	12.143	12.295	24.61	15.00
20.4	67.15	236.95	264.52	3,054.48	10.20	12.891	11.547	19.75	12.00
17.85	58.92	211.80	255.87	2,831.89	10.26	13.370	11.068	17.33	10.51



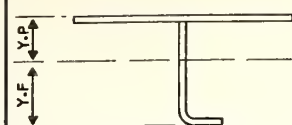
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 14 x 30.6	94.99	293.57	302.03	3,638.10	9.85	12.046	12.392	27.94	18.00
25.5	79.42	260.63	277.05	3,281.86	9.98	12.592	11.846	23.36	15.00
20.4	63.75	216.62	260.24	2,889.03	10.10	13.337	11.101	18.75	12.00
17.85	55.94	193.68	251.79	2,675.26	10.14	13.813	10.625	16.45	10.51
24 x 12 x 30.6	89.89	273.33	287.68	3,425.22	9.75	12.531	11.907	26.44	18.00
25.5	75.17	235.99	271.61	3,085.89	9.87	13.076	11.362	22.11	15.00
20.4	60.35	196.27	255.26	2,711.49	9.96	13.815	10.623	17.75	12.00
17.85	52.96	175.54	247.02	2,507.74	9.98	14.286	10.152	15.58	10.51
24 x 10 x 30.6	84.79	244.56	280.69	3,193.85	9.62	13.060	11.378	24.94	18.00
25.5	70.92	211.31	265.17	2,873.85	9.71	13.600	10.838	20.86	15.00
20.4	56.95	175.88	249.36	2,520.46	9.78	14.330	10.108	16.75	12.00
17.85	49.98	157.38	241.39	2,328.13	9.79	14.793	9.645	14.70	10.51
24 x 8 x 30.6	79.69	215.72	272.30	2,941.47	9.44	13.636	10.802	23.44	18.00
25.5	66.67	186.58	257.44	2,643.65	9.52	14.169	10.269	19.61	15.00
20.4	53.55	155.47	242.29	2,314.35	9.56	14.886	9.552	15.75	12.00
17.85	47.00	139.20	234.64	2,135.08	9.55	15.339	9.099	13.82	10.51
24 x 6 x 30.6	74.59	186.81	262.02	2,665.08	9.19	14.267	10.171	21.94	18.00
25.5	62.42	161.80	247.99	2,392.87	9.25	14.789	9.649	18.36	15.00
20.4	50.15	135.03	233.65	2,091.32	9.27	15.487	8.951	14.75	12.00
17.85	44.02	121.00	226.40	1,927.03	9.25	15.926	8.512	12.95	10.51
21 x 20 x 30.6	102.64	258.85	330.83	3,113.30	8.85	9.411	12.027	30.19	15.75
25.5	85.80	245.39	285.44	2,828.79	9.01	9.910	11.528	25.23	13.12
20.4	68.85	231.68	237.05	2,511.86	9.17	10.596	10.842	20.25	10.50
17.85	60.40	211.79	224.78	2,337.69	9.24	11.038	10.400	17.77	9.20
21 x 18 x 30.6	97.54	255.80	305.79	2,985.97	8.83	9.765	11.673	28.69	15.75
25.5	81.55	242.54	263.87	2,709.32	8.98	10.268	11.170	23.98	13.12
20.4	65.45	219.18	229.05	2,401.08	9.12	10.955	10.483	19.25	10.50
17.85	57.43	195.84	222.24	2,231.75	9.18	11.396	10.042	16.89	9.20
21 x 16 x 30.6	92.44	252.27	280.68	2,848.25	8.80	10.148	11.290	27.19	15.75
25.5	77.30	239.27	242.25	2,580.61	8.94	10.653	10.785	22.73	13.12
20.4	62.05	201.27	226.01	2,282.34	9.05	11.340	10.098	18.25	10.50
17.85	54.45	179.87	219.32	2,118.56	9.10	11.778	9.660	16.01	9.20
21 x 14 x 30.6	87.34	248.17	255.49	2,698.83	8.75	10.563	10.875	25.69	15.75
25.5	73.05	220.59	235.45	2,441.55	8.86	11.068	10.370	21.48	13.12
20.4	58.65	183.34	222.48	2,154.76	8.96	11.753	9.685	17.25	10.50
17.85	51.47	163.88	215.92	1,997.35	8.99	12.188	9.250	15.14	9.20
21 x 12 x 30.6	82.24	230.23	243.34	2,536.15	8.67	11.016	10.422	24.19	15.75
25.5	68.80	198.87	230.96	2,290.83	8.76	11.519	9.919	20.23	13.12
20.4	55.25	165.38	218.32	2,017.31	8.84	12.198	9.240	16.25	10.50
17.85	48.49	147.87	211.93	1,867.24	8.85	12.627	8.811	14.26	9.20
21 x 10 x 30.6	77.14	204.89	237.55	2,358.35	8.55	11.510	9.928	22.69	15.75
25.5	64.55	177.10	225.59	2,126.93	8.63	12.010	9.428	18.98	13.12
20.4	51.85	147.39	213.35	1,868.79	8.67	12.679	8.759	15.25	10.50
17.85	45.51	131.84	207.16	1,727.21	8.67	13.100	8.338	13.39	9.20
21 x 8 x 30.6	72.04	179.48	230.49	2,163.23	8.38	12.053	9.385	21.19	15.75
25.5	60.30	155.29	219.04	1,948.04	8.44	12.545	8.893	17.73	13.12
20.4	48.45	129.38	207.31	1,707.81	8.46	13.200	8.238	14.25	10.50
17.85	42.53	115.79	201.36	1,576.08	8.44	13.611	7.827	12.51	9.20
21 x 6 x 30.6	66.94	153.99	221.71	1,948.12	8.16	12.651	8.787	19.69	15.75
25.5	56.05	133.43	210.91	1,752.01	8.20	13.131	8.307	16.48	13.12
20.4	45.05	111.33	199.82	1,532.74	8.19	13.767	7.671	13.25	10.50
17.85	39.56	99.72	194.17	1,412.47	8.16	14.164	7.274	11.63	9.20



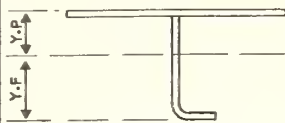
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 18 x 30.6	89.89	211.01	254.48	2,126.99	7.68	8.358	10.080	26.44	13.50
25.5	75.17	201.29	219.80	1,937.27	7.82	8.814	9.624	22.11	11.25
20.4	60.35	182.63	191.35	1,722.89	7.94	9.434	9.004	17.75	9.00
15.3	45.42	142.62	181.09	1,471.04	8.01	10.315	8.123	13.36	6.75
18 x 16 x 30.6	84.79	208.28	232.87	2,027.17	7.66	8.705	9.733	24.94	13.50
25.5	70.92	198.72	201.16	1,843.18	7.78	9.163	9.275	20.86	11.25
20.4	56.95	167.17	188.94	1,635.32	7.88	9.783	8.655	16.75	9.00
15.3	42.87	130.57	178.83	1,391.51	7.92	10.657	7.781	12.61	6.75
18 x 14 x 30.6	79.69	205.06	211.19	1,918.29	7.62	9.083	9.355	23.44	13.50
25.5	66.67	182.46	195.70	1,741.03	7.72	9.542	8.896	19.61	11.25
20.4	53.55	151.68	186.11	1,540.85	7.80	10.159	8.279	15.75	9.00
15.3	40.32	118.52	176.18	1,306.42	7.80	11.023	7.415	11.86	6.75
18 x 12 x 30.6	74.59	189.42	201.23	1,799.06	7.55	9.498	8.940	21.94	13.50
25.5	62.42	163.72	192.11	1,629.76	7.64	9.955	8.483	18.36	11.25
20.4	50.15	136.16	182.75	1,438.61	7.69	10.566	7.872	14.75	9.00
15.3	37.77	106.45	173.04	1,215.17	7.66	11.416	7.022	11.11	6.75
18 x 10 x 30.6	69.49	167.57	196.58	1,667.92	7.45	9.953	8.485	20.44	13.50
25.5	58.17	144.92	187.76	1,508.07	7.52	10.406	8.032	17.11	11.25
20.4	46.75	120.61	178.68	1,327.61	7.54	11.008	7.430	13.75	9.00
15.3	35.22	94.36	169.24	1,117.05	7.48	11.838	6.600	10.36	6.75
18 x 8 x 30.6	64.39	145.64	190.83	1,522.99	7.31	10.457	7.981	18.94	13.50
25.5	53.92	126.07	182.37	1,374.42	7.35	10.902	7.536	15.86	11.25
20.4	43.35	105.03	173.66	1,206.68	7.35	11.489	6.949	12.75	9.00
15.3	32.67	82.27	164.56	1,011.27	7.26	12.293	6.145	9.61	6.75
18 x 6 x 30.6	59.29	123.63	183.52	1,361.99	7.10	11.017	7.421	17.44	13.50
25.5	49.67	107.17	175.55	1,226.98	7.12	11.449	6.989	14.61	11.25
20.4	39.95	89.41	167.30	1,074.41	7.10	12.016	6.422	11.75	9.00
15.3	30.12	70.15	158.65	896.89	6.97	12.785	5.653	8.86	6.75
18 x 4 x 30.6	54.19	101.54	173.93	1,182.07	6.80	11.642	6.796	15.94	13.50
25.5	45.42	88.22	166.62	1,063.48	6.81	12.055	6.383	13.36	11.25
20.4	36.55	73.77	159.01	929.14	6.76	12.595	5.843	10.75	9.00
15.3	27.57	58.03	150.96	772.82	6.61	13.319	5.119	8.11	6.75
16 x 12 x 30.6	69.49	163.49	174.39	1,387.09	6.80	8.484	7.954	20.44	12.00
25.5	58.17	141.39	167.20	1,259.29	6.87	8.906	7.532	17.11	10.00
20.4	46.75	117.61	159.77	1,113.55	6.91	9.468	6.970	13.75	8.00
15.3	35.22	91.91	152.01	941.53	6.87	10.244	6.194	10.36	6.00
16 x 10 x 30.6	64.39	144.01	170.47	1,283.20	6.71	8.911	7.527	18.94	12.00
25.5	53.92	124.61	163.50	1,162.40	6.76	9.328	7.110	15.86	10.00
20.4	43.35	103.71	156.28	1,024.75	6.77	9.881	6.557	12.75	8.00
15.3	32.67	81.10	148.72	862.71	6.70	10.637	5.801	9.61	6.00
16 x 8 x 30.6	59.29	124.44	165.55	1,167.78	6.57	9.384	7.054	17.44	12.00
25.5	49.67	107.77	158.87	1,055.50	6.60	9.794	6.644	14.61	10.00
20.4	39.95	89.78	151.93	927.62	6.59	10.332	6.106	11.75	8.00
15.3	30.12	70.28	144.61	777.48	6.49	11.062	5.376	8.86	6.00
16 x 6 x 30.6	54.19	104.79	159.22	1,038.81	6.38	9.914	6.524	15.94	12.00
25.5	45.42	90.87	152.91	936.96	6.39	10.311	6.127	13.36	10.00
20.4	36.55	75.82	146.34	820.95	6.35	10.828	5.610	10.75	8.00
15.3	27.57	59.45	139.36	685.02	6.22	11.523	4.915	8.11	6.00
16 x 4 x 30.6	49.09	85.04	150.74	893.74	6.10	10.509	5.929	14.44	12.00
25.5	41.17	73.92	144.96	804.77	6.09	10.886	5.552	12.11	10.00
20.4	33.15	61.82	138.90	703.25	6.03	11.375	5.063	9.75	8.00
15.3	25.02	48.60	132.40	584.39	5.87	12.024	4.414	7.36	6.00



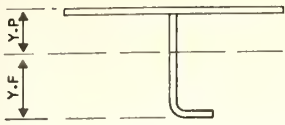
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 12 x 30.6	66.94	150.91	161.34	1,203.81	6.41	7.977	7.461	19.69	11.25
25.5	56.05	130.56	155.04	1,094.19	6.48	8.380	7.058	16.48	9.37
20.4	45.05	108.62	148.51	968.48	6.51	8.917	6.521	13.25	7.50
15.3	33.95	84.87	141.64	819.31	6.47	9.654	5.784	9.98	5.62
15 x 11 x 30.6	64.39	141.78	159.65	1,159.30	6.37	8.177	7.261	18.94	11.25
25.5	53.92	122.69	153.44	1,052.49	6.43	8.579	6.859	15.86	9.37
20.4	43.35	102.09	146.99	930.07	6.45	9.110	6.328	12.75	7.50
15.3	32.67	79.79	140.20	785.04	6.39	9.838	5.600	9.61	5.62
15 x 10 x 30.6	61.84	132.63	157.77	1,112.38	6.33	8.387	7.051	18.19	11.25
25.5	51.80	114.80	151.65	1,008.68	6.37	8.787	6.651	15.23	9.37
20.4	41.65	95.55	145.30	889.91	6.38	9.313	6.125	12.25	7.50
15.3	31.40	74.71	138.59	749.41	6.31	10.031	5.407	9.23	5.62
15 x 9 x 30.6	59.29	123.45	155.65	1,062.86	6.27	8.610	6.828	17.44	11.25
25.5	49.67	106.89	149.65	962.62	6.31	9.006	6.432	14.61	9.37
20.4	39.95	89.01	143.41	847.86	6.30	9.526	5.912	11.75	7.50
15.3	30.12	69.63	136.80	712.34	6.21	10.231	5.207	8.86	5.62
15 x 8 x 30.6	56.74	114.25	153.26	1,010.52	6.20	8.845	6.593	16.69	11.25
25.5	47.55	98.97	147.39	914.12	6.23	9.236	6.202	13.98	9.37
20.4	38.25	82.46	141.27	803.80	6.21	9.748	5.690	11.25	7.50
15.3	28.85	64.54	134.77	673.72	6.11	10.439	4.999	8.48	5.62
15 x 7 x 30.6	54.19	105.03	150.54	955.10	6.12	9.094	6.344	15.94	11.25
25.5	45.42	91.04	144.82	862.97	6.13	9.479	5.959	13.36	9.37
20.4	36.55	75.90	138.84	757.57	6.10	9.982	5.456	10.75	7.50
15.3	27.57	59.45	132.48	633.47	5.98	10.656	4.782	8.11	5.62
15 x 6 x 30.6	51.64	95.79	147.41	896.33	6.01	9.357	6.081	15.19	11.25
25.5	43.30	83.09	141.87	808.97	6.02	9.736	5.702	12.73	9.37
20.4	34.85	69.33	136.06	709.02	5.98	10.227	5.211	10.25	7.50
15.3	26.30	54.35	129.85	591.48	5.84	10.883	4.555	7.73	5.62
15 x 5 x 30.6	49.09	86.52	143.77	833.89	5.89	9.638	5.800	14.44	11.25
25.5	41.17	75.13	138.44	751.85	5.89	10.007	5.431	12.11	9.37
20.4	33.15	62.75	132.84	657.95	5.83	10.485	4.953	9.75	7.50
15.3	25.02	49.25	126.81	547.63	5.68	11.120	4.318	7.36	5.62
15 x 4 x 30.6	46.54	77.24	139.49	767.43	5.74	9.936	5.502	13.69	11.25
25.5	39.05	67.16	134.41	691.35	5.73	10.295	5.143	11.48	9.37
20.4	31.45	56.17	129.06	604.17	5.66	10.757	4.681	9.25	7.50
15.3	23.75	44.15	123.26	501.80	5.50	11.367	4.071	6.98	5.62
14 x 10 x 30.6	59.29	121.51	145.31	955.42	5.95	7.863	6.575	17.44	10.50
25.5	49.67	105.22	140.00	867.29	5.99	8.243	6.195	14.61	8.75
20.4	39.95	87.59	134.45	765.78	5.99	8.742	5.696	11.75	7.00
15.3	30.12	68.48	128.56	645.09	5.91	9.420	5.018	8.86	5.25
14 x 9 x 30.6	56.74	112.93	143.39	912.13	5.89	8.077	6.361	16.69	10.50
25.5	47.55	97.82	138.17	826.92	5.92	8.453	5.985	13.98	8.75
20.4	38.25	81.47	132.71	728.84	5.91	8.946	5.492	11.25	7.00
15.3	28.85	63.72	126.90	612.46	5.82	9.612	4.826	8.48	5.25
14 x 8 x 30.6	54.19	104.34	141.20	866.30	5.83	8.303	6.135	15.94	10.50
25.5	45.42	90.42	136.10	784.36	5.85	8.675	5.763	13.36	8.75
20.4	36.55	75.34	130.75	690.09	5.82	9.160	5.278	10.75	7.00
15.3	27.57	58.96	125.02	578.44	5.72	9.811	4.627	8.11	5.25
14 x 7 x 30.6	51.64	95.72	138.71	817.70	5.74	8.543	5.895	15.19	10.50
25.5	43.30	83.00	133.73	739.41	5.76	8.909	5.529	12.73	8.75
20.4	34.85	69.20	128.50	649.39	5.72	9.384	5.054	10.25	7.00
15.3	26.30	54.19	122.88	542.96	5.60	10.020	4.418	7.73	5.25

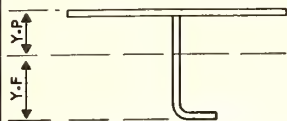


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
14 x 6 x 30.6	49.09	87.08	135.82	766.07	5.65	8.798	5.640	14.44	10.50
25.5	41.17	75.56	131.00	691.87	5.65	9.157	5.281	12.11	8.75
20.4	33.15	63.05	125.92	606.58	5.60	9.621	4.817	9.75	7.00
15.3	25.02	49.42	120.43	505.90	5.46	10.237	4.201	7.36	5.25
13 x 9 x 30.6	54.19	102.69	131.35	774.48	5.51	7.542	5.896	15.94	9.75
25.5	45.42	89.00	126.87	702.87	5.53	7.898	5.540	13.36	8.12
20.4	36.55	74.13	122.16	619.97	5.52	8.363	5.075	10.75	6.50
15.3	27.57	57.98	117.08	521.08	5.43	8.987	4.451	8.11	4.87
13 x 8 x 30.6	51.64	94.70	129.37	734.76	5.45	7.759	5.679	15.19	9.75
25.5	43.30	82.11	124.98	665.89	5.46	8.110	5.328	12.73	8.12
20.4	34.85	68.43	120.35	586.22	5.44	8.567	4.871	10.25	6.50
15.3	26.30	53.54	115.35	491.41	5.33	9.178	4.260	7.73	4.87
13 x 7 x 30.6	49.09	86.69	127.10	692.56	5.37	7.989	5.449	14.44	9.75
25.5	41.17	75.20	122.82	626.77	5.37	8.335	5.103	12.11	8.12
20.4	33.15	62.71	118.29	550.73	5.34	8.782	4.656	9.75	6.50
15.3	25.02	49.10	113.37	460.42	5.21	9.377	4.061	7.36	4.87
13 x 6 x 30.6	46.54	78.65	124.46	647.65	5.27	8.234	5.204	13.69	9.75
25.5	39.05	68.28	120.31	585.33	5.27	8.573	4.865	11.48	8.12
20.4	31.45	56.98	115.90	513.35	5.22	9.009	4.429	9.25	6.50
15.3	23.75	44.66	111.08	428.04	5.08	9.585	3.853	6.98	4.87
12 x 9 x 30.6	51.64	92.73	119.54	649.53	5.12	7.004	5.434	15.19	9.00
25.5	43.30	80.41	115.75	590.15	5.14	7.339	5.099	12.73	7.50
20.4	34.85	67.00	111.73	520.96	5.12	7.775	4.663	10.25	6.00
15.3	26.30	52.40	107.34	437.98	5.03	8.358	4.080	7.73	4.50
12 x 8 x 30.6	49.09	85.35	117.76	615.50	5.06	7.211	5.227	14.44	9.00
25.5	41.17	74.04	114.04	558.38	5.07	7.542	4.896	12.11	7.50
20.4	33.15	61.72	110.09	491.91	5.04	7.970	4.468	9.75	6.00
15.3	25.02	48.30	105.76	412.39	4.93	8.539	3.899	7.36	4.50
12 x 7 x 30.6	46.54	77.95	115.71	579.29	4.99	7.432	5.006	13.69	9.00
25.5	39.05	67.65	112.08	524.73	4.99	7.756	4.682	11.48	7.50
20.4	31.45	56.43	108.20	461.31	4.95	8.175	4.263	9.25	6.00
15.3	23.75	44.19	103.93	385.64	4.82	8.727	3.711	6.98	4.50
12 x 6 x 30.6	43.99	70.52	113.31	540.66	4.90	7.667	4.771	12.94	9.00
25.5	36.92	61.25	109.78	489.02	4.89	7.984	4.454	10.86	7.50
20.4	29.75	51.13	106.00	429.04	4.84	8.391	4.047	8.75	6.00
15.3	22.47	40.07	101.81	357.66	4.70	8.925	3.513	6.61	4.50
11 x 8 x 25.5	39.05	66.22	103.28	461.51	4.68	6.969	4.469	11.48	6.87
22.95	35.29	60.89	101.66	435.57	4.67	7.153	4.285	10.38	6.19
20.4	31.45	55.23	99.94	406.88	4.65	7.367	4.071	9.25	5.50
17.85	27.64	49.41	98.17	375.92	4.61	7.609	3.829	8.13	4.82
15.3	23.75	43.22	96.24	341.16	4.54	7.893	3.545	6.98	4.12
11 x 7 x 25.5	36.92	60.36	101.51	432.95	4.60	7.173	4.265	10.86	6.87
22.95	33.38	55.52	99.92	408.20	4.59	7.353	4.085	9.82	6.19
20.4	29.75	50.37	98.23	380.85	4.56	7.561	3.877	8.75	5.50
17.85	26.15	45.07	96.48	351.39	4.51	7.796	3.642	7.69	4.82
15.3	22.47	39.45	94.57	318.38	4.43	8.071	3.367	6.61	4.12
11 x 6 x 25.5	34.80	54.48	99.43	402.59	4.51	7.389	4.049	10.23	6.87
22.95	31.46	50.13	97.88	379.19	4.49	7.564	3.874	9.25	6.19
20.4	28.05	45.50	96.23	353.37	4.45	7.766	3.672	8.25	5.50
17.85	24.66	40.73	94.51	325.59	4.40	7.993	3.445	7.25	4.82
15.3	21.20	35.66	92.62	294.51	4.31	8.258	3.180	6.23	4.12
10 x 8 x 25.5	36.92	58.65	92.68	374.94	4.28	6.392	4.046	10.86	6.25
22.95	33.38	53.95	91.35	354.05	4.27	6.562	3.876	9.82	5.63
20.4	29.75	48.95	89.92	330.85	4.25	6.759	3.679	8.75	5.00



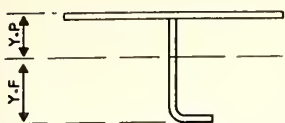
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 8 x 17.85	26.15	43.80	88.43	305.75	4.21	6.980	3.458	7.69	4.38
15.3	22.47	38.32	86.78	277.48	4.14	7.241	3.197	6.61	3.75
10 x 7 x 25.5	34.80	53.32	91.10	351.09	4.21	6.584	3.854	10.23	6.25
22.95	31.46	49.06	89.79	331.16	4.19	6.750	3.688	9.25	5.63
20.4	28.05	44.53	88.38	309.06	4.16	6.941	3.497	8.25	5.00
17.85	24.66	39.85	86.90	285.20	4.11	7.156	3.282	7.25	4.38
15.3	21.20	34.88	85.27	258.38	4.04	7.408	3.030	6.23	3.75
10 x 6 x 25.5	32.67	47.98	89.24	325.69	4.12	6.788	3.650	9.61	6.25
22.95	29.55	44.16	87.95	306.86	4.10	6.949	3.489	8.69	5.63
20.4	26.35	40.09	86.57	286.02	4.06	7.134	3.304	7.75	5.00
17.85	23.17	35.90	85.11	263.55	4.01	7.341	3.097	6.82	4.38
15.3	19.92	31.43	83.49	238.36	3.93	7.583	2.855	5.86	3.75

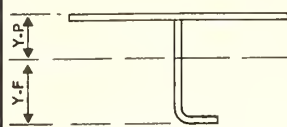


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MOOULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 30.6	151.09	505.40	707.01	8,988.96	12.56	12.714	17.786	44.44	22.50
25.5	126.17	476.70	607.71	8,147.98	12.82	13.408	17.092	37.11	18.75
20.4	101.15	447.66	502.97	7,224.03	13.08	14.363	16.137	29.75	15.00
17.85	88.70	433.11	448.69	6,721.56	13.20	14.981	15.519	26.09	13.14
30 x 27 x 30.6	143.44	499.60	652.88	8,632.20	12.56	13.222	17.278	42.19	22.50
25.5	119.80	471.33	561.25	7,813.76	12.79	13.922	16.578	35.23	18.75
20.4	96.05	442.72	464.60	6,914.25	13.03	14.882	15.618	28.25	15.00
17.85	84.23	414.50	428.37	6,425.12	13.13	15.501	14.999	24.77	13.14
30 x 24 x 30.6	135.79	492.90	598.63	8,244.83	12.54	13.773	16.727	39.94	22.50
25.5	113.42	465.14	514.71	7,452.22	12.75	14.478	16.022	33.36	18.75
20.4	90.95	426.18	437.01	6,580.78	12.95	15.441	15.059	26.75	15.00
17.85	79.76	380.28	422.90	6,107.02	13.03	16.059	14.441	23.46	13.14
30 x 21 x 30.6	128.14	485.09	544.24	7,822.73	12.48	14.374	16.126	37.69	22.50
25.5	107.05	457.91	468.09	7,059.85	12.67	15.082	15.418	31.48	18.75
20.4	85.85	387.71	430.36	6,220.83	12.84	16.045	14.455	25.25	15.00
17.85	75.30	346.02	416.53	5,764.79	12.90	16.660	13.840	22.15	13.14
30 x 18 x 30.6	120.49	475.84	489.74	7,361.02	12.39	15.031	15.469	35.44	22.50
25.5	100.67	421.38	449.36	6,632.56	12.55	15.740	14.760	29.61	18.75
20.4	80.75	349.19	422.50	5,831.08	12.68	16.699	13.801	23.75	15.00
17.85	70.83	311.74	409.01	5,395.58	12.72	17.308	13.192	20.83	13.14
30 x 15 x 30.6	112.84	435.10	464.74	6,853.85	12.25	15.752	14.748	33.19	22.50
25.5	94.30	374.60	439.10	6,165.44	12.38	16.459	14.041	27.73	18.75
20.4	75.65	310.63	413.08	5,407.69	12.47	17.409	13.091	22.25	15.00
17.85	66.36	277.41	399.99	4,996.07	12.49	18.010	12.490	19.52	13.14
30 x 12 x 30.6	105.19	380.34	451.16	6,294.14	12.04	16.549	13.951	30.94	22.50
25.5	87.92	327.73	426.56	5,652.66	12.14	17.248	13.252	25.86	18.75
20.4	70.55	272.02	401.56	4,946.11	12.20	18.183	12.317	20.75	15.00
17.85	61.89	243.06	388.98	4,562.37	12.19	18.771	11.729	18.20	13.14
30 x 9 x 30.6	97.54	325.44	434.15	5,673.29	11.74	17.432	13.068	28.69	22.50
25.5	81.55	280.77	410.87	5,087.18	11.81	18.118	12.382	23.98	18.75
20.4	65.45	233.36	387.18	4,440.91	11.83	19.030	11.470	19.25	15.00
17.85	57.43	208.66	375.23	4,089.88	11.80	19.600	10.900	16.89	13.14
30 x 6 x 30.6	89.89	270.42	412.25	4,980.71	11.31	18.418	12.082	26.44	22.50
25.5	75.17	233.74	390.69	4,460.44	11.35	19.083	11.417	22.11	18.75
20.4	60.35	194.66	368.70	3,885.61	11.33	19.961	10.539	17.75	15.00
17.85	52.96	174.24	357.58	3,573.18	11.28	20.507	9.993	15.58	13.14
27 x 27 x 30.6	135.79	437.23	577.35	6,842.15	11.42	11.851	15.649	39.94	20.25
25.5	113.42	414.24	496.48	6,210.12	11.64	12.508	14.992	33.36	16.87
20.4	90.95	390.92	410.95	5,509.39	11.85	13.406	14.094	26.75	13.50
17.85	79.76	366.56	379.20	5,125.58	11.94	13.983	13.517	23.46	11.83
27 x 24 x 30.6	128.14	431.63	528.28	6,532.44	11.41	12.365	15.135	37.69	20.25
25.5	107.05	409.02	454.35	5,919.29	11.60	13.028	14.472	31.48	16.87
20.4	85.85	376.14	386.08	5,239.40	11.78	13.929	13.571	25.25	13.50
17.85	75.30	335.55	374.55	4,867.18	11.85	14.505	12.995	22.15	11.83
27 x 21 x 30.6	120.49	425.05	479.08	6,193.67	11.37	12.928	14.572	35.44	20.25
25.5	100.67	402.90	412.13	5,602.57	11.53	13.594	13.906	29.61	16.87
20.4	80.75	341.29	380.41	4,947.07	11.68	14.495	13.005	23.75	13.50
17.85	70.83	304.51	369.09	4,588.40	11.73	15.068	12.432	20.83	11.83
27 x 18 x 30.6	112.84	417.21	429.75	5,821.54	11.29	13.546	13.954	33.19	20.25
25.5	94.30	369.82	395.61	5,256.33	11.43	14.213	13.287	27.73	16.87
20.4	75.65	306.38	373.65	4,629.51	11.54	15.110	12.390	22.25	13.50
17.85	66.36	273.43	362.60	4,286.75	11.57	15.678	11.822	19.52	11.83

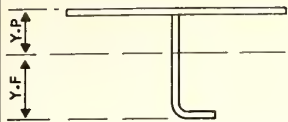


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 15 x 30.6	105.19	380.28	407.71	5,410.87	11.16	14.229	13.271	30.94	20.25
25.5	87.92	327.43	386.78	4,876.25	11.27	14.893	12.607	25.86	16.87
20.4	70.55	271.43	365.49	4,283.30	11.35	15.781	11.719	20.75	13.50
17.85	61.89	242.32	354.75	3,959.29	11.36	16.339	11.161	18.20	11.83
27 x 12 x 30.6	97.54	330.67	395.97	4,955.34	10.97	14.986	12.514	28.69	20.25
25.5	81.55	284.94	375.88	4,457.12	11.05	15.642	11.858	23.98	16.87
20.4	65.45	236.42	355.40	3,904.38	11.09	16.514	10.986	19.25	13.50
17.85	57.43	211.17	345.07	3,602.54	11.07	17.060	10.440	16.89	11.83
27 x 9 x 30.6	89.89	280.94	381.07	4,447.18	10.69	15.830	11.670	26.44	20.25
25.5	75.17	242.38	362.06	3,992.57	10.74	16.473	11.027	22.11	16.87
20.4	60.35	201.37	342.65	3,487.89	10.74	17.321	10.179	17.75	13.50
17.85	52.96	179.98	332.83	3,212.40	10.70	17.848	9.652	15.58	11.83
27 x 6 x 30.6	82.24	231.06	361.55	3,876.70	10.28	16.778	10.722	24.19	20.25
25.5	68.80	199.72	343.98	3,474.81	10.30	17.398	10.102	20.23	16.87
20.4	55.25	166.27	325.98	3,027.93	10.26	18.211	9.289	16.25	13.50
17.85	48.49	148.77	316.85	2,783.95	10.20	18.714	8.786	14.26	11.83
24 x 24 x 30.6	120.49	372.78	460.03	5,044.97	10.26	10.967	13.533	35.44	18.00
25.5	100.67	354.87	395.78	4,584.06	10.43	11.582	12.918	29.61	15.00
20.4	80.75	327.63	336.63	4,067.88	10.59	12.416	12.084	23.75	12.00
17.85	70.83	292.20	327.44	3,783.02	10.65	12.947	11.553	20.83	10.51
24 x 22 x 30.6	115.39	369.28	430.74	4,871.18	10.24	11.309	13.191	33.94	18.00
25.5	96.42	351.58	370.62	4,420.40	10.40	11.927	12.573	28.36	15.00
20.4	77.35	306.84	333.56	3,915.65	10.54	12.761	11.739	22.75	12.00
17.85	67.85	273.68	324.47	3,637.27	10.59	13.290	11.210	19.96	10.51
24 x 20 x 30.6	110.29	365.33	401.39	4,685.80	10.21	11.674	12.826	32.44	18.00
25.5	92.17	345.42	347.88	4,246.42	10.35	12.294	12.206	27.11	15.00
20.4	73.95	286.03	330.11	3,754.53	10.47	13.126	11.374	21.75	12.00
17.85	64.87	255.15	321.14	3,483.43	10.50	13.653	10.847	19.08	10.51
24 x 18 x 30.6	105.19	360.86	371.99	4,487.63	10.16	12.064	12.436	30.94	18.00
25.5	87.92	320.18	343.69	4,061.10	10.29	12.684	11.816	25.86	15.00
20.4	70.55	265.19	326.20	3,583.73	10.38	13.514	10.986	20.75	12.00
17.85	61.89	236.59	317.36	3,320.82	10.40	14.036	10.464	18.20	10.51
24 x 16 x 30.6	100.09	342.51	355.74	4,275.28	10.10	12.482	12.018	29.44	18.00
25.5	83.67	294.89	338.91	3,863.30	10.20	13.101	11.399	24.61	15.00
20.4	67.15	244.33	321.73	3,402.33	10.27	13.925	10.575	19.75	12.00
17.85	58.92	218.02	313.04	3,148.66	10.27	14.442	10.058	17.33	10.51
24 x 14 x 30.6	94.99	312.98	349.83	4,047.18	10.00	12.931	11.569	27.94	18.00
25.5	79.42	269.57	333.38	3,651.71	10.09	13.546	10.954	23.36	15.00
20.4	63.75	223.45	316.58	3,209.32	10.13	14.363	10.137	18.75	12.00
17.85	55.94	199.44	308.07	2,966.08	10.12	14.872	9.628	16.45	10.51
24 x 12 x 30.6	89.89	283.38	342.94	3,801.51	9.88	13.415	11.085	26.44	18.00
25.5	75.17	244.21	326.94	3,424.84	9.95	14.024	10.476	22.11	15.00
20.4	60.35	202.55	310.57	3,003.55	9.96	14.829	9.671	17.75	12.00
17.85	52.96	180.84	302.28	2,772.11	9.94	15.329	9.171	15.58	10.51
24 x 10 x 30.6	84.79	253.72	334.78	3,536.16	9.72	13.937	10.563	24.94	18.00
25.5	70.92	218.80	319.32	3,180.97	9.76	14.538	9.962	20.86	15.00
20.4	56.95	181.62	303.48	2,783.72	9.76	15.327	9.173	16.75	12.00
17.85	49.98	162.22	295.44	2,565.64	9.71	15.816	8.684	14.70	10.51
24 x 8 x 30.6	79.69	223.99	324.98	3,248.67	9.51	14.503	9.997	23.44	18.00
25.5	66.67	193.35	310.18	2,918.12	9.53	15.092	9.408	19.61	15.00
20.4	53.55	160.66	294.98	2,548.32	9.50	15.861	8.639	15.75	12.00
17.85	47.00	143.58	287.25	2,345.44	9.44	16.335	8.165	13.82	10.51



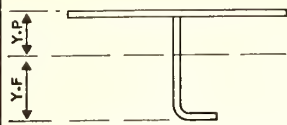
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 6 x 30.6	74.59	194.20	312.98	2,936.14	9.23	15.119	9.381	21.94	18.00
25.5	62.42	167.87	299.00	2,633.98	9.24	15.691	8.809	18.36	15.00
20.4	50.15	139.69	284.61	2,295.64	9.18	16.434	8.066	14.75	12.00
17.85	44.02	124.93	277.27	2,110.07	9.11	16.890	7.610	12.95	10.51
21 x 20 x 30.6	102.64	310.42	342.31	3,500.05	9.05	10.225	11.275	30.19	15.75
25.5	85.80	294.69	297.03	3,180.45	9.18	10.793	10.707	25.23	13.12
20.4	68.85	244.00	283.34	2,818.66	9.28	11.552	9.948	20.25	10.50
17.85	60.40	217.59	276.40	2,617.57	9.30	12.030	9.470	17.77	9.20
21 x 18 x 30.6	97.54	306.79	316.45	3,349.15	9.02	10.583	10.917	28.69	15.75
25.5	81.55	272.46	293.61	3,038.42	9.13	11.152	10.348	23.98	13.12
20.4	65.45	225.64	280.12	2,686.88	9.20	11.908	9.592	19.25	10.50
17.85	57.43	201.24	273.26	2,491.72	9.21	12.382	9.118	16.89	9.20
21 x 16 x 30.6	92.44	290.53	302.62	3,186.86	8.96	10.969	10.531	27.19	15.75
25.5	77.30	250.20	289.68	2,886.30	9.05	11.536	9.964	22.73	13.12
20.4	62.05	207.25	276.41	2,546.54	9.10	12.287	9.213	18.25	10.50
17.85	54.45	184.87	269.67	2,358.14	9.09	12.755	8.745	16.01	9.20
21 x 14 x 30.6	87.34	264.53	297.77	3,011.82	8.88	11.385	10.115	25.69	15.75
25.5	73.05	227.89	285.10	2,723.01	8.95	11.949	9.551	21.48	13.12
20.4	58.65	188.84	272.10	2,396.75	8.98	12.692	8.808	17.25	10.50
17.85	51.47	168.49	265.48	2,216.09	8.95	13.153	8.347	15.14	9.20
21 x 12 x 30.6	82.24	238.47	292.05	2,822.47	8.77	11.836	9.664	24.19	15.75
25.5	68.80	205.53	279.71	2,547.24	8.82	12.393	9.107	20.23	13.12
20.4	55.25	170.41	267.03	2,236.55	8.82	13.124	8.376	16.25	10.50
17.85	48.49	152.09	260.57	2,064.74	8.78	13.576	7.924	14.26	9.20
21 x 10 x 30.6	77.14	212.35	285.20	2,616.93	8.62	12.324	9.176	22.69	15.75
25.5	64.55	183.14	273.27	2,357.52	8.65	12.873	8.627	18.98	13.12
20.4	51.85	151.95	260.98	2,064.81	8.63	13.588	7.912	15.25	10.50
17.85	45.51	135.67	254.70	1,903.15	8.57	14.028	7.472	13.39	9.20
21 x 8 x 30.6	72.04	186.15	276.87	2,393.20	8.43	12.856	8.644	21.19	15.75
25.5	60.30	160.70	265.44	2,152.12	8.44	13.392	8.108	17.73	13.12
20.4	48.45	133.47	253.64	1,880.22	8.38	14.087	7.413	14.25	10.50
17.85	42.53	119.23	247.59	1,730.24	8.32	14.512	6.988	12.51	9.20
21 x 6 x 30.6	66.94	159.89	266.50	2,148.58	8.17	13.438	8.062	19.69	15.75
25.5	56.05	138.22	255.71	1,929.01	8.16	13.956	7.544	16.48	13.12
20.4	45.05	114.97	244.53	1,681.30	8.08	14.624	6.876	13.25	10.50
17.85	39.56	102.78	238.78	1,544.78	8.00	15.030	6.470	11.63	9.20
18 x 18 x 30.6	89.89	255.03	263.15	2,395.99	7.84	9.105	9.395	26.44	13.50
25.5	75.17	226.69	245.36	2,179.82	7.94	9.616	8.884	22.11	11.25
20.4	60.35	187.74	235.39	1,932.14	7.99	10.292	8.208	17.75	9.00
15.3	45.42	145.99	224.97	1,637.94	7.96	11.219	7.281	13.36	6.75
18 x 16 x 30.6	84.79	240.83	251.74	2,277.01	7.80	9.455	9.045	24.94	13.50
25.5	70.92	207.49	242.23	2,067.54	7.87	9.964	8.536	20.86	11.25
20.4	56.95	171.87	232.41	1,827.83	7.91	10.635	7.865	16.75	9.00
15.3	42.87	133.69	222.11	1,543.93	7.84	11.549	6.951	12.61	6.75
18 x 14 x 30.6	79.69	218.44	247.87	2,148.12	7.73	9.834	8.666	23.44	13.50
25.5	66.67	188.25	238.55	1,946.51	7.79	10.340	8.160	19.61	11.25
20.4	53.55	155.97	228.90	1,716.14	7.79	11.003	7.497	15.75	9.00
15.3	40.32	121.37	218.76	1,444.13	7.70	11.898	6.602	11.86	6.75
18 x 12 x 30.6	74.59	195.98	243.27	2,008.00	7.64	10.246	8.254	21.94	13.50
25.5	62.42	168.96	234.17	1,815.69	7.67	10.746	7.754	18.36	11.25
20.4	50.15	140.05	224.74	1,596.26	7.65	11.397	7.103	14.75	9.00
15.3	37.77	109.04	214.78	1,338.00	7.53	12.271	6.229	11.11	6.75



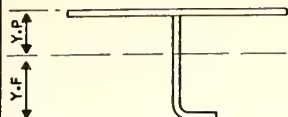
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 10 x 30.6	69.49	173.45	237.70	1,855.12	7.50	10.695	7.805	20.44	13.50
25.5	58.17	149.62	228.88	1,673.82	7.52	11.187	7.313	17.11	11.25
20.4	46.75	124.11	219.71	1,467.24	7.48	11.822	6.678	13.75	9.00
15.3	35.22	96.70	209.99	1,224.89	7.32	12.667	5.833	10.36	6.75
18 x 8 x 30.6	64.39	150.85	230.80	1,687.66	7.33	11.188	7.312	18.94	13.50
25.5	53.92	130.24	222.34	1,519.45	7.32	11.666	6.834	15.86	11.25
20.3	43.35	108.14	213.52	1,328.00	7.25	12.280	6.220	12.75	9.00
15.3	32.67	84.35	204.10	1,104.12	7.07	13.090	5.410	9.61	6.75
18 x 6 x 30.6	59.29	128.17	222.06	1,503.43	7.09	11.730	6.770	17.44	13.50
25.5	49.67	110.82	214.07	1,350.84	7.06	12.190	6.310	14.61	11.25
20.4	39.95	92.15	205.69	1,177.29	6.97	12.776	5.724	11.75	9.00
15.3	30.12	71.98	196.68	974.87	6.76	13.543	4.957	8.86	6.75
18 x 4 x 30.6	54.19	105.43	210.61	1,299.77	6.76	12.329	6.171	15.94	13.50
25.5	45.42	91.35	203.26	1,165.95	6.71	12.764	5.736	13.36	11.25
20.4	36.55	76.12	195.49	1,013.60	6.60	13.315	5.185	10.75	9.00
15.3	27.57	59.60	187.04	836.21	6.37	14.029	4.471	8.11	6.75
16 x 12 x 30.6	69.49	169.01	211.92	1,551.39	6.86	9.179	7.321	20.44	12.00
25.5	58.17	145.76	204.73	1,404.83	6.89	9.638	6.862	17.11	10.00
20.4	46.75	120.82	197.21	1,236.23	6.86	10.232	6.268	13.75	8.00
15.3	35.22	94.03	189.17	1,036.34	6.73	11.022	5.478	10.36	6.00
16 x 10 x 30.6	64.39	148.92	207.15	1,429.50	6.74	9.599	6.901	18.94	12.00
25.5	53.92	128.50	200.17	1,291.29	6.75	10.049	6.451	15.86	10.00
20.4	43.35	106.58	192.85	1,132.63	6.70	10.627	5.873	12.75	8.00
15.3	32.67	83.00	184.96	945.31	6.54	11.389	5.111	9.61	6.00
16 x 8 x 30.6	59.29	128.75	201.20	1,295.40	6.58	10.062	6.438	17.44	12.00
25.5	49.67	111.19	194.49	1,167.29	6.56	10.498	6.002	14.61	10.00
20.4	39.95	92.31	187.41	1,020.49	6.49	11.055	5.445	11.75	8.00
15.3	30.12	71.96	179.74	847.89	6.30	11.783	4.717	8.86	6.00
16 x 6 x 30.6	54.19	108.50	193.53	1,147.16	6.35	10.572	5.928	15.94	12.00
25.5	45.42	93.84	187.18	1,031.30	6.32	10.990	5.510	13.36	10.00
20.4	36.55	78.02	180.44	898.70	6.22	11.519	4.981	10.75	8.00
15.3	27.57	60.91	173.06	743.38	6.01	12.204	4.296	8.11	6.00
15 x 12 x 30.6	66.94	155.94	196.59	1,347.86	6.47	8.644	6.856	19.69	11.25
25.5	56.05	134.52	190.28	1,221.49	6.49	9.080	6.420	16.48	9.37
20.4	45.05	111.52	183.64	1,075.45	6.46	9.644	5.856	13.25	7.50
15.3	33.95	86.77	176.48	901.64	6.33	10.391	5.109	9.98	5.62
15 x 11 x 30.6	64.39	146.52	194.52	1,295.32	6.42	8.841	6.659	18.94	11.25
25.5	53.92	126.42	188.29	1,172.37	6.43	9.274	6.226	15.86	9.37
20.4	43.35	104.83	181.73	1,030.44	6.39	9.830	5.670	12.75	7.50
15.3	32.67	81.59	174.63	861.93	6.24	10.564	4.936	9.61	5.62
15 x 10 x 30.6	61.84	137.07	192.22	1,240.22	6.36	9.048	6.452	18.19	11.25
25.5	51.80	118.31	186.08	1,121.03	6.36	9.476	6.024	15.23	9.37
20.4	41.65	98.13	179.60	983.62	6.30	10.023	5.477	12.25	7.50
15.3	31.40	76.41	172.56	820.86	6.15	10.743	4.757	9.23	5.62
15 x 9 x 30.6	59.29	127.61	189.63	1,182.36	6.28	9.265	6.235	17.44	11.25
25.5	49.67	110.18	183.60	1,067.32	6.27	9.687	5.813	14.61	9.37
20.4	39.95	91.43	177.22	934.86	6.21	10.225	5.275	11.75	7.50
15.3	30.12	71.22	170.26	778.33	6.04	10.928	4.572	8.86	5.62
15 x 8 x 30.6	56.74	118.14	186.72	1,121.53	6.20	9.494	6.006	16.69	11.25
25.5	47.55	102.05	180.81	1,011.08	6.18	9.908	5.592	13.98	9.37
20.4	38.25	84.72	174.54	884.06	6.10	10.435	5.065	11.25	7.50
15.3	28.85	66.03	167.66	734.29	5.92	11.120	4.380	8.48	5.62



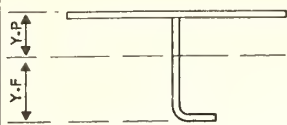
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	108.64	183.40	1,057.49	6.10	9.734	5.766	15.94	11.25
25.5	45.42	93.90	177.63	952.12	6.07	10.140	5.360	13.36	9.37
20.4	36.55	78.01	171.49	831.07	5.98	10.654	4.846	10.75	7.50
15.3	27.57	60.84	164.72	688.65	5.78	11.319	4.181	8.11	5.62
14 x 10 x 30.6	59.29	125.52	177.50	1,066.12	5.97	8.494	6.006	17.44	10.50
25.5	49.67	108.37	172.16	964.31	5.96	8.899	5.601	14.61	8.75
20.4	39.95	89.90	166.48	846.43	5.91	9.416	5.084	11.75	7.00
15.3	30.12	69.99	160.23	706.30	5.75	10.092	4.408	8.86	5.25
14 x 9 x 30.6	56.74	116.68	175.13	1,015.38	5.90	8.702	5.798	16.69	10.50
25.5	47.55	100.77	169.88	917.13	5.88	9.101	5.399	13.98	8.75
20.4	38.25	83.63	164.27	803.54	5.82	9.609	4.891	11.25	7.00
15.3	28.85	65.13	158.08	668.85	5.65	10.269	4.231	8.48	5.25
14 x 8 x 30.6	54.19	107.82	172.45	961.96	5.82	8.922	5.578	15.94	10.50
25.5	45.42	93.16	167.30	867.67	5.79	9.314	5.186	13.36	8.75
20.4	36.55	77.35	161.78	758.79	5.71	9.810	4.690	10.75	7.00
15.3	27.57	60.28	155.66	630.04	5.53	10.452	4.048	8.11	5.25
14 x 7 x 30.6	51.64	98.94	169.39	905.66	5.72	9.153	5.347	15.19	10.50
25.5	43.30	85.54	164.35	815.75	5.69	9.537	4.963	12.73	8.75
20.4	34.85	71.07	158.94	712.08	5.59	10.020	4.480	10.25	7.00
15.3	26.30	55.42	152.90	589.79	5.40	10.643	3.857	7.73	5.25
13 x 9 x 30.6	54.19	106.04	160.85	862.75	5.51	8.136	5.364	15.94	9.75
25.5	45.42	91.61	156.32	779.77	5.49	8.512	4.988	13.36	8.12
20.4	36.55	76.04	151.44	683.41	5.42	8.987	4.513	10.75	6.50
15.3	27.57	59.22	145.97	568.76	5.25	9.604	3.896	8.11	4.87
13 x 8 x 30.6	51.64	97.80	158.40	816.31	5.43	8.346	5.154	15.19	9.75
25.5	43.30	84.54	153.95	736.70	5.40	8.715	4.785	12.73	8.12
20.4	34.85	70.20	149.14	644.39	5.32	9.179	4.321	10.25	6.50
15.3	26.30	54.70	143.72	534.89	5.14	9.778	3.722	7.73	4.87
13 x 7 x 30.6	49.09	89.55	155.59	767.29	5.34	8.568	4.932	14.44	9.75
25.5	41.17	77.45	151.23	691.43	5.30	8.928	4.572	12.11	8.12
20.4	33.15	64.35	146.51	603.62	5.21	9.380	4.120	9.75	6.50
15.3	25.02	50.18	141.14	499.74	5.02	9.959	3.541	7.36	4.87
12 x 9 x 30.6	51.64	95.69	146.77	724.07	5.11	7.567	4.933	15.19	9.00
25.5	43.30	82.72	142.91	654.91	5.09	7.917	4.583	12.73	7.50
20.4	34.85	68.68	138.71	574.20	5.02	8.361	4.139	10.25	6.00
15.3	26.30	53.49	133.92	477.80	4.86	8.932	3.568	7.73	4.50
12 x 8 x 30.6	49.09	88.09	144.54	684.17	5.04	7.767	4.733	14.44	9.00
25.5	41.17	76.18	140.75	617.82	5.01	8.111	4.389	12.11	7.50
20.4	33.15	63.28	136.60	540.56	4.93	8.543	3.957	9.75	6.00
15.3	25.02	49.31	131.83	448.58	4.75	9.097	3.403	7.36	4.50
12 x 7 x 30.6	46.54	80.46	141.98	641.98	4.95	7.978	4.522	13.69	9.00
25.5	39.05	69.62	138.26	578.81	4.91	8.314	4.186	11.48	7.50
20.4	31.45	57.87	134.17	505.37	4.82	8.733	3.767	9.25	6.00
15.3	23.75	45.12	129.44	418.23	4.63	9.269	3.231	6.98	4.50
12 x 6 x 30.6	43.99	72.82	138.99	597.31	4.85	8.203	4.297	12.94	9.00
25.5	36.92	63.05	135.37	537.70	4.80	8.528	3.972	10.86	7.50
20.4	29.75	52.45	131.35	468.53	4.70	8.933	3.567	8.75	6.00
15.3	22.47	40.93	126.66	386.70	4.50	9.447	3.053	6.61	4.50



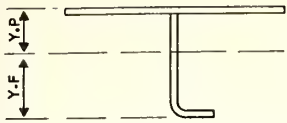
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 30.6	151.09	591.50	728.51	9,977.21	12.86	13.695	16.868	44.44	22.50
25.5	126.17	562.91	625.16	9,052.83	13.07	14.481	16.082	37.11	18.75
20.4	101.15	516.19	533.91	8,021.24	13.26	15.539	15.024	29.75	15.00
17.85	88.70	459.79	519.31	7,453.45	13.33	16.210	14.353	26.09	13.14
30 x 27 x 30.6	143.44	584.81	672.85	9,562.41	12.84	14.212	16.351	42.19	22.50
25.5	119.80	556.65	577.46	8,662.55	13.02	15.001	15.562	35.23	18.75
20.4	96.05	476.90	528.05	7,658.64	13.18	16.059	14.504	28.25	15.00
17.85	84.23	424.83	513.66	7,106.53	13.23	16.728	13.835	24.77	13.14
30 x 24 x 30.6	135.79	577.10	617.08	9,114.15	12.78	14.770	15.793	39.94	22.50
25.5	113.42	529.70	549.42	8,242.54	12.94	15.561	15.002	33.36	18.75
20.4	90.95	437.56	521.30	7,270.50	13.06	16.616	13.947	26.75	15.00
17.85	79.76	389.85	507.13	6,736.42	13.09	17.280	13.283	23.46	13.14
30 x 21 x 30.6	128.14	561.19	568.09	8,628.22	12.70	15.375	15.188	37.69	22.50
25.5	107.05	481.86	540.99	7,789.26	12.83	16.165	14.398	31.48	18.75
20.4	85.85	398.18	513.43	6,854.03	12.91	17.213	13.350	25.25	15.00
17.85	75.30	354.83	499.53	6,340.71	12.92	17.870	12.693	22.15	13.14
30 x 18 x 30.6	120.49	505.19	557.45	8,099.66	12.57	16.033	14.530	35.44	22.50
25.5	100.67	433.96	531.03	7,298.58	12.67	16.819	13.744	29.61	18.75
20.4	80.75	358.76	504.14	6,406.01	12.72	17.856	12.707	23.75	15.00
17.85	70.83	319.78	490.57	5,916.65	12.70	18.502	12.061	20.83	13.14
30 x 15 x 30.6	112.84	449.07	544.66	7,522.59	12.39	16.752	13.811	33.19	22.50
25.5	94.30	385.97	519.08	6,765.68	12.46	17.529	13.034	27.73	18.75
20.4	75.65	319.29	493.00	5,922.70	12.47	18.549	12.014	22.25	15.00
17.85	66.36	284.71	479.82	5,461.07	12.43	19.181	11.382	19.52	13.14
30 x 12 x 30.6	105.19	392.84	529.03	6,890.04	12.14	17.539	13.024	30.94	22.50
25.5	87.92	337.92	504.47	6,184.88	12.18	18.303	12.260	25.86	18.75
20.4	70.55	279.79	479.40	5,399.78	12.15	19.299	11.264	20.75	15.00
17.85	61.89	249.60	466.71	4,970.33	12.08	19.913	10.650	18.20	13.14
30 x 9 x 30.6	97.54	336.49	509.48	6,193.57	11.79	18.406	12.157	28.69	22.50
25.5	81.55	289.79	486.23	5,549.39	11.80	19.150	11.413	23.98	18.75
20.4	65.45	240.24	462.44	4,832.17	11.73	20.114	10.449	19.25	15.00
17.85	57.43	214.46	450.36	4,440.20	11.65	20.704	9.859	16.89	13.14
30 x 6 x 30.6	89.89	280.03	484.32	5,422.99	11.33	19.366	11.197	26.44	22.50
25.5	75.17	241.58	462.78	4,851.13	11.31	20.080	10.483	22.11	18.75
20.4	60.35	200.65	440.67	4,213.86	11.20	21.001	9.562	17.75	15.00
17.85	52.96	179.30	429.40	3,865.73	11.09	21.560	9.003	15.58	13.14
27 x 27 x 30.6	135.79	514.38	594.71	7,602.41	11.67	12.783	14.780	39.94	20.25
25.5	113.42	491.48	510.45	6,901.52	11.84	13.521	14.042	33.36	16.87
20.4	90.95	421.43	468.15	6,113.00	11.98	14.505	13.058	26.75	13.50
17.85	79.76	375.31	456.38	5,676.51	12.02	15.125	12.438	23.46	11.83
27 x 24 x 30.6	128.14	507.87	544.26	7,241.32	11.63	13.305	14.258	37.69	20.25
25.5	107.05	467.21	485.34	6,561.41	11.77	14.044	13.519	31.48	16.87
20.4	85.85	385.81	462.38	5,797.02	11.88	15.026	12.537	25.25	13.50
17.85	75.30	343.63	450.78	5,374.44	11.89	15.640	11.923	22.15	11.83
27 x 21 x 30.6	120.49	493.69	500.23	6,848.55	11.56	13.872	13.691	35.44	20.25
25.5	100.67	423.90	478.14	6,193.23	11.67	14.610	12.953	29.61	16.87
20.4	80.75	350.14	455.61	5,457.10	11.74	15.585	11.978	23.75	13.50
17.85	70.83	311.91	444.21	5,050.73	11.73	16.193	11.370	20.83	11.83
27 x 18 x 30.6	112.84	443.00	491.13	6,419.75	11.44	14.492	13.071	33.19	20.25
25.5	94.30	380.51	469.57	5,793.38	11.53	15.225	12.338	27.73	16.87
20.4	75.65	314.43	447.56	5,090.42	11.56	16.189	11.374	22.25	13.50
17.85	66.36	280.16	436.41	4,702.96	11.53	16.786	10.777	19.52	11.83



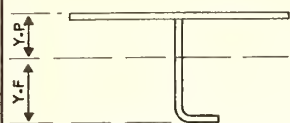
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 15 x 30.6	105.19	392.19	480.10	5,949.71	11.28	15.170	12.393	30.94	20.25
25.5	87.92	337.04	459.20	5,357.59	11.33	15.896	11.667	25.86	16.87
20.4	70.55	278.68	437.83	4,693.68	11.33	16.843	10.720	20.75	13.50
17.85	61.89	248.39	426.98	4,328.36	11.27	17.426	10.137	18.20	11.83
27 x 12 x 30.6	97.54	341.26	466.48	5,432.18	11.04	15.918	11.645	28.69	20.25
25.5	81.55	293.50	446.40	4,880.77	11.07	16.629	10.934	23.98	16.87
20.4	65.45	242.88	425.82	4,263.03	11.02	17.552	10.011	19.25	13.50
17.85	57.43	216.58	415.36	3,923.68	10.95	18.116	9.447	16.89	11.83
27 x 9 x 30.6	89.89	290.21	449.22	4,859.59	10.72	16.745	10.818	26.44	20.25
25.5	75.17	249.88	430.20	4,356.84	10.71	17.436	10.127	22.11	16.87
20.4	60.35	207.04	410.65	3,793.92	10.63	18.324	9.239	17.75	13.50
17.85	52.96	184.74	400.68	3,485.16	10.53	18.865	8.698	15.58	11.83
27 x 6 x 30.6	82.24	239.04	426.62	4,222.64	10.27	17.665	9.898	24.19	20.25
25.5	68.80	206.19	409.03	3,778.46	10.23	18.325	9.238	20.23	16.87
20.4	55.25	171.16	390.87	3,280.97	10.11	19.169	8.394	16.25	13.50
17.85	48.49	152.87	381.56	3,008.36	10.00	19.679	7.884	14.26	11.83
24 x 24 x 30.6	120.49	440.97	473.64	5,609.24	10.46	11.843	12.720	35.44	18.00
25.5	100.67	406.63	423.11	5,093.22	10.59	12.525	12.038	29.61	15.00
20.4	80.75	335.69	404.84	4,507.74	10.67	13.428	11.135	23.75	12.00
17.85	70.83	298.89	395.56	4,181.84	10.68	13.991	10.572	20.83	10.51
24 x 22 x 30.6	115.39	436.86	443.53	5,405.96	10.42	12.188	12.375	33.94	18.00
25.5	96.42	380.82	419.21	4,901.46	10.53	12.871	11.692	28.36	15.00
20.4	77.35	314.42	401.14	4,329.55	10.59	13.770	10.793	22.75	12.00
17.85	67.85	279.98	391.95	4,011.61	10.59	14.328	10.235	19.96	10.51
24 x 20 x 30.6	110.29	413.37	432.23	5,190.05	10.37	12.555	12.008	32.44	18.00
25.5	92.17	354.98	414.82	4,698.55	10.46	13.236	11.327	27.11	15.00
20.4	73.95	293.14	396.97	4,141.89	10.50	14.129	10.434	21.75	12.00
17.85	64.87	261.06	387.90	3,832.84	10.48	14.682	9.881	19.08	10.51
24 x 18 x 30.6	105.19	383.15	426.99	4,960.30	10.30	12.946	11.617	30.94	18.00
25.5	87.92	329.10	409.85	4,483.47	10.37	13.624	10.939	25.86	15.00
20.4	70.55	271.84	392.26	3,943.96	10.38	14.509	10.054	20.75	12.00
17.85	61.89	242.12	383.31	3,644.87	10.35	15.054	9.509	18.20	10.51
24 x 16 x 30.6	100.09	352.88	420.99	4,715.34	10.20	13.362	11.201	29.44	18.00
25.5	83.67	303.18	404.17	4,255.10	10.26	14.035	10.528	24.61	15.00
20.4	67.15	250.51	386.89	3,734.92	10.24	14.909	9.654	19.75	12.00
17.85	58.92	223.17	378.08	3,446.97	10.19	15.446	9.117	17.33	10.51
24 x 14 x 30.6	94.99	322.55	414.07	4,453.59	10.09	13.807	10.756	27.94	18.00
25.5	79.42	277.23	397.62	4,012.18	10.12	14.472	10.091	23.36	15.00
20.4	63.75	229.17	380.69	3,513.80	10.08	15.333	9.230	18.75	12.00
17.85	55.94	204.20	372.05	3,238.34	10.01	15.859	8.704	16.45	10.51
24 x 12 x 30.6	89.89	292.17	405.99	4,173.28	9.93	14.284	10.279	26.44	18.00
25.5	75.17	251.24	389.98	3,753.25	9.94	14.939	9.624	22.11	15.00
20.4	60.35	207.80	373.47	3,279.51	9.88	15.782	8.781	17.75	12.00
17.85	52.96	185.22	365.03	3,018.08	9.80	16.295	8.268	15.58	10.51
24 x 10 x 30.6	84.79	261.73	396.45	3,872.35	9.74	14.795	9.768	24.94	18.00
25.5	70.92	225.22	380.96	3,476.69	9.73	15.437	9.126	20.86	15.00
20.4	56.95	186.42	364.96	3,030.85	9.64	16.258	8.305	16.75	12.00
17.85	49.98	166.22	356.75	2,785.19	9.55	16.756	7.807	14.70	10.51
24 x 8 x 30.6	79.69	231.23	384.99	3,548.44	9.50	15.346	9.217	23.44	18.00
25.5	66.67	199.16	370.15	3,180.64	9.47	15.970	8.593	19.61	15.00
20.4	53.55	165.01	354.77	2,766.45	9.36	16.765	7.798	15.75	12.00
17.85	47.00	147.21	346.85	2,538.54	9.25	17.244	7.319	13.82	10.51

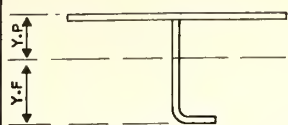


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 6 x 30.6	74.59	200.67	370.98	3,198.83	9.20	15.940	8.623	21.94	18.00
25.5	62.42	173.07	356.95	2,862.95	9.15	16.542	8.021	18.36	15.00
20.4	50.15	143.59	342.34	2,484.76	9.01	17.305	7.258	14.75	12.00
17.85	44.02	128.19	334.79	2,276.89	8.89	17.762	6.801	12.95	10.51
21 x 20 x 30.6	102.64	352.23	369.31	3,887.48	9.19	11.037	10.526	30.19	15.75
25.5	85.80	302.52	355.94	3,526.22	9.26	11.656	9.907	25.23	13.12
20.4	68.85	249.75	342.15	3,113.06	9.29	12.465	9.098	20.25	10.50
17.85	60.40	222.35	335.09	2,882.10	9.26	12.962	8.601	17.77	9.20
21 x 18 x 30.6	97.54	325.66	365.01	3,711.16	9.13	11.396	10.167	28.69	15.75
25.5	81.55	279.74	351.84	3,360.28	9.19	12.012	9.551	23.98	13.12
20.4	65.45	230.99	338.22	2,959.59	9.18	12.813	8.750	19.25	10.50
17.85	57.43	205.67	331.24	2,736.02	9.14	13.303	8.260	16.89	9.20
21 x 16 x 30.6	92.44	299.03	360.07	3,522.55	9.05	11.780	9.783	27.19	15.75
25.5	77.30	256.92	347.11	3,183.59	9.08	12.391	9.172	22.73	13.12
20.4	62.05	212.21	333.71	2,797.12	9.06	13.181	8.382	18.25	10.50
17.85	54.45	188.97	326.82	2,581.92	9.00	13.663	7.900	16.01	9.20
21 x 14 x 30.6	87.34	272.34	354.32	3,320.33	8.94	12.192	9.371	25.69	15.75
25.5	73.05	234.07	341.62	2,995.07	8.96	12.796	8.767	21.48	13.12
20.4	58.65	193.40	328.47	2,624.84	8.91	13.572	7.991	17.25	10.50
17.85	51.47	172.26	321.69	2,419.10	8.84	14.043	7.520	15.14	9.20
21 x 12 x 30.6	82.24	245.59	347.54	3,102.95	8.80	12.635	8.928	24.19	15.75
25.5	68.80	211.17	335.16	2,793.49	8.80	13.228	8.335	20.23	13.12
20.4	55.25	174.58	322.30	2,441.82	8.72	13.987	7.576	16.25	10.50
17.85	48.49	155.54	315.66	2,246.81	8.64	14.445	7.118	14.26	9.20
21 x 10 x 30.6	77.14	218.78	339.44	2,868.65	8.63	13.112	8.451	22.69	15.75
25.5	64.55	188.25	327.45	2,577.44	8.60	13.692	7.871	18.98	13.12
20.4	51.85	155.73	314.96	2,247.03	8.50	14.429	7.134	15.25	10.50
17.85	45.51	138.80	308.48	2,064.20	8.40	14.872	6.691	13.39	9.20
21 x 8 x 30.6	72.04	191.92	329.59	2,615.38	8.40	13.628	7.935	21.19	15.75
25.5	60.30	165.28	318.09	2,345.31	8.36	14.190	7.373	17.73	13.12
20.4	48.45	136.87	306.05	2,039.29	8.23	14.900	6.663	14.25	10.50
17.85	42.53	122.05	299.79	1,870.30	8.12	15.324	6.239	12.51	9.20
21 x 6 x 30.6	66.94	164.99	317.36	2,340.74	8.12	14.187	7.376	19.69	15.75
25.5	56.05	142.28	306.48	2,095.23	8.05	14.726	6.837	16.48	13.12
20.4	45.05	117.98	295.03	1,817.28	7.90	15.403	6.160	13.25	10.50
17.85	39.56	105.28	289.03	1,664.04	7.78	15.806	5.757	11.63	9.20
18 x 18 x 30.6	89.89	270.54	305.20	2,662.17	7.93	9.840	8.723	26.44	13.50
25.5	75.17	232.46	295.51	2,415.24	7.98	10.390	8.173	22.11	11.25
20.4	60.35	191.93	285.40	2,130.21	7.96	11.099	7.464	17.75	9.00
15.3	45.42	148.71	274.59	1,790.73	7.83	12.042	6.521	13.36	6.75
18 x 16 x 30.6	84.79	247.61	301.24	2,522.77	7.87	10.188	8.375	24.94	13.50
25.5	70.92	212.79	291.70	2,283.93	7.89	10.733	7.830	20.86	11.25
20.4	56.95	175.73	281.71	2,008.88	7.85	11.432	7.131	16.75	9.00
15.3	42.87	136.20	270.99	1,682.55	7.69	12.354	6.209	12.61	6.75
18 x 14 x 30.6	79.69	224.62	296.60	2,372.73	7.77	10.563	8.000	23.44	13.50
25.5	66.67	193.09	287.22	2,143.37	7.78	11.101	7.462	19.61	11.25
20.4	53.55	159.50	277.38	1,879.86	7.71	11.786	6.777	15.75	9.00
15.3	40.32	123.67	266.77	1,568.52	7.52	12.683	5.880	11.86	6.75
18 x 12 x 30.6	74.59	201.57	291.07	2,210.77	7.65	10.968	7.595	21.94	13.50
25.5	62.42	173.34	281.90	1,992.53	7.63	11.495	7.068	18.36	11.25
20.4	50.15	143.26	272.25	1,742.42	7.55	12.163	6.400	14.75	9.00
15.3	37.77	111.13	261.78	1,448.14	7.33	13.031	5.532	11.11	6.75

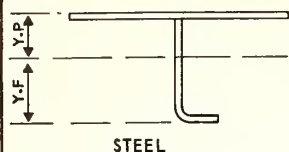


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 10 x 30.6	69.49	178.46	284.38	2,035.44	7.49	11.406	7.157	20.44	13.50
25.5	58.17	153.56	275.47	1,830.26	7.45	11.919	6.644	17.11	11.25
20.4	46.75	126.99	266.05	1,595.69	7.34	12.565	5.998	13.75	9.00
15.3	35.22	98.58	255.77	1,320.88	7.10	13.399	5.164	10.36	6.75
18 x 8 x 30.6	64.39	155.28	276.13	1,844.98	7.28	11.881	6.682	18.94	13.50
25.5	53.92	133.74	267.55	1,655.19	7.23	12.377	6.186	15.86	11.25
20.4	43.35	110.70	258.44	1,438.69	7.09	12.996	5.567	12.75	9.00
15.3	32.67	86.03	248.40	1,186.11	6.83	13.788	4.775	9.61	6.75
18 x 6 x 30.6	59.29	132.05	265.67	1,637.37	7.01	12.400	6.163	17.44	13.50
25.5	49.67	113.87	257.54	1,465.75	6.94	12.872	5.691	14.61	11.25
20.4	39.95	94.39	248.84	1,270.32	6.78	13.458	5.105	11.75	9.00
15.3	30.12	73.46	239.14	1,043.16	6.50	14.201	4.362	8.86	6.75
18 x 4 x 30.6	54.19	108.75	252.01	1,410.17	6.66	12.967	5.596	15.94	13.50
25.5	45.42	93.97	244.50	1,260.11	6.57	13.409	5.154	13.36	11.25
20.4	36.55	78.06	236.37	1,089.29	6.40	13.955	4.608	10.75	9.00
15.3	27.57	60.88	227.16	891.26	6.10	14.640	3.923	8.11	6.75
16 x 12 x 30.6	69.49	173.67	254.50	1,709.78	6.86	9.845	6.718	20.44	12.00
25.5	58.17	149.39	247.22	1,542.32	6.84	10.324	6.239	17.11	10.00
20.4	46.75	123.45	239.46	1,349.19	6.75	10.929	5.634	13.75	8.00
15.3	35.22	95.73	230.87	1,120.83	6.54	11.708	4.855	10.36	6.00
16 x 10 x 30.6	64.39	153.06	248.73	1,569.39	6.72	10.253	6.310	18.94	12.00
25.5	53.92	131.73	241.63	1,412.05	6.67	10.719	5.844	15.86	10.00
20.4	43.35	108.93	234.02	1,231.14	6.56	11.302	5.261	12.75	8.00
15.3	32.67	84.53	225.53	1,018.34	6.33	12.048	4.515	9.61	6.00
16 x 8 x 30.6	59.29	132.39	241.51	1,416.35	6.52	10.698	5.865	17.44	12.00
25.5	49.67	114.04	234.66	1,271.08	6.46	11.146	5.417	14.61	10.00
20.4	39.95	94.38	227.26	1,104.55	6.33	11.703	4.860	11.75	8.00
15.3	30.12	73.31	218.91	909.63	6.07	12.408	4.155	8.86	6.00
16 x 6 x 30.6	54.19	111.65	232.25	1,248.88	6.27	11.186	5.377	15.94	12.00
25.5	45.42	96.30	225.73	1,118.05	6.19	11.610	4.953	13.36	10.00
20.4	36.55	79.82	218.62	968.43	6.03	12.133	4.430	10.75	8.00
15.3	27.57	62.09	210.49	794.12	5.76	12.790	3.773	8.11	6.00
15 x 12 x 30.6	66.94	160.16	236.54	1,486.25	6.47	9.280	6.283	19.69	11.25
25.5	56.05	137.80	230.12	1,341.33	6.44	9.734	5.829	16.48	9.37
20.4	45.05	113.88	223.23	1,173.61	6.35	10.305	5.258	13.25	7.50
15.3	33.95	88.30	215.50	974.78	6.14	11.040	4.523	9.98	5.62
15 x 11 x 30.6	64.39	150.50	234.01	1,425.46	6.40	9.472	6.091	18.94	11.25
25.5	53.92	129.51	227.67	1,284.74	6.37	9.920	5.643	15.86	9.37
20.4	43.35	107.06	220.83	1,122.16	6.26	10.481	5.082	12.75	7.50
15.3	32.67	83.04	213.12	929.96	6.04	11.200	4.363	9.61	5.62
15 x 10 x 30.6	61.84	140.82	231.20	1,362.00	6.33	9.672	5.891	18.19	11.25
25.5	51.80	121.22	224.93	1,225.87	6.28	10.113	5.450	15.23	9.37
20.4	41.65	100.24	218.16	1,068.88	6.17	10.663	4.900	12.25	7.50
15.3	31.40	77.77	210.49	883.80	5.94	11.364	4.199	9.23	5.62
15 x 9 x 30.6	59.29	131.12	228.05	1,295.67	6.24	9.882	5.681	17.44	11.25
25.5	49.67	112.91	221.88	1,164.58	6.18	10.314	5.249	14.61	9.37
20.4	39.95	93.41	215.17	1,013.67	6.06	10.852	4.711	11.75	7.50
15.3	30.12	72.50	207.55	836.24	5.82	11.534	4.029	8.86	5.62
15 x 8 x 30.6	56.74	121.41	224.50	1,226.30	6.14	10.101	5.462	16.69	11.25
25.5	47.55	104.59	218.43	1,100.73	6.07	10.524	5.039	13.98	9.37
20.4	38.25	86.57	211.82	956.42	5.94	11.048	4.515	11.25	7.50
15.3	28.85	67.23	204.24	787.21	5.69	11.709	3.854	8.48	5.62

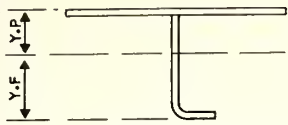


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	111.68	220.47	1,153.64	6.02	10.330	5.233	15.94	11.25
25.5	45.42	96.27	214.52	1,034.15	5.95	10.742	4.821	13.36	9.37
20.4	36.55	79.73	208.02	897.01	5.81	11.251	4.312	10.75	7.50
15.3	27.57	61.96	200.51	736.65	5.55	11.889	3.674	8.11	5.62
14 x 10 x 30.6	59.29	128.88	213.88	1,171.15	5.93	9.087	5.476	17.44	10.50
25.5	49.67	110.97	208.39	1,054.50	5.88	9.503	5.060	14.61	8.75
20.4	39.95	91.77	202.39	919.54	5.77	10.020	4.543	11.75	7.00
15.3	30.12	71.20	195.50	760.06	5.55	10.675	3.888	8.86	5.25
14 x 9 x 30.6	56.74	119.82	210.97	1,112.88	5.85	9.288	5.275	16.69	10.50
25.5	47.55	103.20	205.56	1,000.59	5.79	9.695	4.868	13.98	8.75
20.4	38.25	85.39	199.62	870.93	5.67	10.200	4.363	11.25	7.00
15.3	28.85	66.27	192.74	718.17	5.43	10.837	3.726	8.48	5.25
14 x 8 x 30.6	54.19	110.74	207.69	1,051.85	5.75	9.498	5.065	15.94	10.50
25.5	45.42	95.43	202.36	944.37	5.69	9.896	4.667	13.36	8.75
20.4	36.55	78.99	196.48	820.48	5.55	10.387	4.176	10.75	7.00
15.3	27.57	61.34	189.63	674.97	5.31	11.004	3.559	8.11	5.25
14 x 7 x 30.6	51.64	101.65	203.93	987.88	5.64	9.719	4.844	15.19	10.50
25.5	43.30	87.64	198.71	885.69	5.57	10.106	4.457	12.73	8.75
20.4	34.85	72.59	192.91	768.11	5.43	10.581	3.982	10.25	7.00
15.3	26.30	56.41	186.10	630.40	5.17	11.176	3.387	7.73	5.25
13 x 9 x 30.6	54.19	108.83	194.08	945.75	5.45	8.690	4.873	15.94	9.75
25.5	45.42	93.77	189.38	850.63	5.40	9.071	4.492	13.36	8.12
20.4	36.55	77.60	184.15	740.43	5.28	9.542	4.021	10.75	6.50
15.3	27.57	60.23	177.97	610.32	5.05	10.134	3.429	8.11	4.87
13 x 8 x 30.6	51.64	100.39	191.06	892.60	5.36	8.891	4.672	15.19	9.75
25.5	43.30	86.54	186.42	801.61	5.30	9.263	4.300	12.73	8.12
20.4	34.85	71.65	181.23	696.42	5.17	9.720	3.843	10.25	6.50
15.3	26.30	55.64	175.05	572.63	4.93	10.292	3.271	7.73	4.87
13 x 7 x 30.6	49.09	91.94	187.59	836.83	5.26	9.102	4.461	14.44	9.75
25.5	41.17	79.30	183.03	750.40	5.18	9.463	4.100	12.11	8.12
20.4	33.15	65.69	177.89	650.69	5.04	9.905	3.658	9.75	6.50
15.3	25.02	51.05	171.73	533.72	4.80	10.455	3.108	7.36	4.87
12 x 9 x 30.6	51.64	98.16	177.38	793.87	5.06	8.087	4.476	15.19	9.00
25.5	43.30	84.62	173.34	714.33	5.00	8.442	4.121	12.73	7.50
20.4	34.85	70.04	168.77	621.86	4.88	8.878	3.685	10.25	6.00
15.3	26.30	54.37	163.24	512.40	4.66	9.424	3.139	7.73	4.50
12 x 8 x 30.6	49.09	90.37	174.61	748.12	4.97	8.278	4.285	14.44	9.00
25.5	41.17	77.93	170.61	672.09	4.90	8.624	3.939	12.11	7.50
20.4	33.15	64.54	166.06	583.90	4.78	9.047	3.516	9.75	6.00
15.3	25.02	50.13	160.52	479.89	4.55	9.573	2.990	7.36	4.50
12 x 7 x 30.6	46.54	82.56	171.42	700.05	4.87	8.479	4.084	13.69	9.00
25.5	39.05	71.24	167.48	627.90	4.79	8.814	3.749	11.48	7.50
20.4	31.45	59.03	162.96	544.43	4.66	9.222	3.341	9.25	6.00
15.3	23.75	45.88	157.40	446.31	4.42	9.728	2.835	6.98	4.50
12 x 6 x 30.6	43.99	74.73	167.71	649.47	4.75	8.690	3.873	12.94	9.00
25.5	36.92	64.54	163.84	581.66	4.67	9.013	3.550	10.86	7.50
20.4	29.75	53.52	159.36	503.35	4.52	9.404	3.159	8.75	6.00
15.3	22.47	41.63	153.80	411.60	4.28	9.887	2.676	6.61	4.50



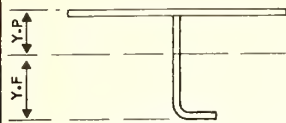
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

25.5 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 30.6	151.09	686.00	747.03	10,951.72	13.08	14.660	15.965	44.44	22.50
25.5	126.17	639.91	657.45	9,931.08	13.24	15.520	15.105	37.11	18.75
20.4	101.15	527.14	628.37	8,778.97	13.35	16.654	13.971	29.75	15.00
17.85	88.70	468.88	613.66	8,140.01	13.36	17.360	13.265	26.09	13.14
30 x 27 x 30.6	143.44	678.31	690.05	10,475.71	13.03	15.181	15.444	42.19	22.50
25.5	119.80	591.17	650.17	9,482.57	13.16	16.040	14.585	35.23	18.75
20.4	96.05	487.08	621.48	8,362.64	13.23	17.169	13.456	28.25	15.00
17.85	84.23	433.29	606.96	7,742.45	13.22	17.869	12.756	24.77	13.14
30 x 24 x 30.6	135.79	632.97	669.44	9,963.70	12.94	15.741	14.884	39.94	22.50
25.5	113.42	542.38	641.77	9,002.26	13.05	16.598	14.027	33.36	18.75
20.4	90.95	446.98	613.53	7,919.31	13.08	17.717	12.908	26.75	15.00
17.85	79.76	397.68	599.23	7,320.59	13.05	18.408	12.217	23.46	13.14
30 x 21 x 30.6	128.14	575.78	659.09	9,411.43	12.83	16.346	14.279	37.69	22.50
25.5	107.05	493.51	631.98	8,486.65	12.90	17.196	13.429	31.48	18.75
20.4	85.85	406.85	604.28	7,446.29	12.90	18.302	12.323	25.25	15.00
17.85	75.30	362.04	590.22	6,872.12	12.84	18.982	11.643	22.15	13.14
30 x 18 x 30.6	120.49	518.49	646.86	8,813.95	12.66	16.999	13.626	35.44	22.50
25.5	100.67	444.59	620.42	7,931.69	12.70	17.841	12.784	29.61	18.75
20.4	80.75	366.68	593.36	6,940.49	12.66	18.928	11.697	23.75	15.00
17.85	70.83	326.37	579.61	6,394.46	12.59	19.593	11.032	20.83	13.14
30 x 15 x 30.6	112.84	461.10	632.19	8,165.48	12.45	17.709	12.916	33.19	22.50
25.5	94.30	395.59	606.56	7,332.71	12.46	18.536	12.089	27.73	18.75
20.4	75.65	326.47	580.28	6,398.36	12.38	19.599	11.026	22.25	15.00
17.85	66.36	290.68	566.90	5,884.65	12.28	20.245	10.380	19.52	13.14
30 x 12 x 30.6	105.19	403.60	614.26	7,459.20	12.16	18.482	12.143	30.94	22.50
25.5	87.92	346.54	589.64	6,684.25	12.14	19.289	11.336	25.86	18.75
20.4	70.55	286.23	564.33	5,815.86	12.02	20.319	10.306	20.75	15.00
17.85	61.89	254.96	551.40	5,339.34	11.90	20.942	9.683	18.20	13.14
30 x 9 x 30.6	97.54	346.00	591.85	6,687.01	11.78	19.327	11.298	28.69	22.50
25.5	81.55	297.41	568.51	5,979.91	11.72	20.106	10.519	23.98	18.75
20.4	65.45	245.94	544.44	5,188.31	11.57	21.095	9.530	19.25	15.00
17.85	57.43	219.22	532.11	4,754.68	11.43	21.689	8.936	16.89	13.14
30 x 6 x 30.6	89.89	288.30	563.04	5,839.24	11.27	20.254	10.371	26.44	22.50
25.5	75.17	248.22	541.40	5,212.15	11.19	20.998	9.627	22.11	18.75
20.4	60.35	205.63	518.97	4,510.25	11.00	21.934	8.691	17.75	15.00
17.85	52.96	183.45	507.42	4,126.26	10.84	22.493	8.132	15.58	13.14
27 x 27 x 30.6	135.79	598.98	609.53	8,345.69	11.85	13.692	13.933	39.94	20.25
25.5	113.42	522.16	576.09	7,566.44	11.96	14.491	13.134	33.36	16.87
20.4	90.95	430.05	552.64	6,681.08	12.02	15.536	12.089	26.75	13.50
17.85	79.76	382.43	540.73	6,188.10	12.00	16.181	11.444	23.46	11.83
27 x 24 x 30.6	128.14	557.90	591.44	7,930.87	11.77	14.216	13.409	37.69	20.25
25.5	107.05	478.00	568.90	7,175.61	11.86	15.012	12.613	31.48	16.87
20.4	85.85	393.75	545.79	6,318.83	11.88	16.048	11.577	25.25	13.50
17.85	75.30	350.20	534.03	5,842.74	11.84	16.684	10.941	22.15	11.83
27 x 21 x 30.6	120.49	506.16	582.59	7,482.11	11.67	14.782	12.843	35.44	20.25
25.5	100.67	433.77	560.47	6,754.95	11.72	15.573	12.052	29.61	16.87
20.4	80.75	357.42	537.77	5,931.47	11.71	16.595	11.030	23.75	13.50
17.85	70.83	317.93	526.19	5,474.89	11.65	17.220	10.405	20.83	11.83
27 x 18 x 30.6	112.84	454.31	572.05	6,995.05	11.52	15.397	12.228	33.19	20.25
25.5	94.30	389.47	550.45	6,300.93	11.55	16.178	11.447	27.73	16.87
20.4	75.65	321.05	528.23	5,516.30	11.49	17.182	10.443	22.25	13.50
17.85	66.36	285.64	516.88	5,082.28	11.41	17.792	9.833	19.52	11.83



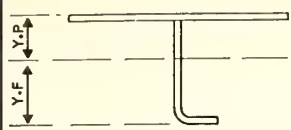
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

25.5 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 15 x 30.6	105.19	402.36	559.30	6,464.57	11.32	16.067	11.558	30.94	20.25
25.5	87.92	345.11	538.33	5,809.40	11.31	16.834	10.791	25.86	16.87
20.4	70.55	284.64	516.71	5,070.21	11.22	17.813	9.812	20.75	13.50
17.85	61.89	253.33	505.64	4,662.34	11.12	18.404	9.221	18.20	11.83
27 x 12 x 30.6	97.54	350.29	543.56	5,884.59	11.05	16.799	10.826	28.69	20.25
25.5	81.55	300.68	523.39	5,275.52	11.01	17.545	10.080	23.98	16.87
20.4	65.45	248.20	502.53	4,589.62	10.88	18.492	9.133	19.25	13.50
17.85	57.43	220.99	491.80	4,212.09	10.75	19.060	8.565	16.89	11.83
27 x 9 x 30.6	89.89	298.12	523.63	5,247.85	10.68	17.603	10.022	26.44	20.25
25.5	75.17	256.18	504.49	4,693.56	10.62	18.321	9.304	22.11	16.87
20.4	60.35	211.71	484.62	4,070.35	10.45	19.226	8.399	17.75	13.50
17.85	52.96	188.62	474.36	3,728.14	10.31	19.766	7.859	15.58	11.83
27 x 6 x 30.6	82.24	245.85	497.58	4,545.57	10.20	18.490	9.135	24.19	20.25
25.5	68.80	211.61	479.83	4,056.72	10.10	19.171	8.454	20.23	16.87
20.4	55.25	175.19	461.30	3,507.55	9.90	20.021	7.604	16.25	13.50
17.85	48.49	156.22	451.67	3,206.56	9.74	20.526	7.099	14.26	11.83
24 x 24 x 30.6	120.49	485.15	515.65	6,155.44	10.58	12.688	11.937	35.44	18.00
25.5	100.67	415.65	497.76	5,577.71	10.65	13.419	11.206	29.61	15.00
20.4	80.75	342.26	479.31	4,917.10	10.66	14.366	10.259	23.75	12.00
17.85	70.83	304.30	469.86	4,547.98	10.62	14.946	9.679	20.83	10.51
24 x 22 x 30.6	115.39	454.35	510.84	5,921.59	10.52	13.033	11.592	33.94	18.00
25.5	96.42	389.30	493.15	5,357.33	10.58	13.761	10.864	28.36	15.00
20.4	77.35	320.61	474.88	4,713.09	10.56	14.700	9.925	22.75	12.00
17.85	67.85	285.08	465.51	4,353.77	10.50	15.272	9.353	19.96	10.51
24 x 20 x 30.6	110.29	423.50	505.44	5,674.23	10.45	13.399	11.226	32.44	18.00
25.5	92.17	362.92	487.97	5,125.13	10.48	14.122	10.503	27.11	15.00
20.4	73.95	298.94	469.91	4,499.20	10.44	15.050	9.575	21.75	12.00
17.85	64.87	265.84	460.62	4,150.74	10.37	15.614	9.011	19.08	10.51
24 x 18 x 30.6	105.19	392.60	499.31	5,412.18	10.36	13.786	10.839	30.94	18.00
25.5	87.92	336.51	482.10	4,880.15	10.37	14.502	10.123	25.86	15.00
20.4	70.55	277.26	464.27	4,274.69	10.30	15.418	9.207	20.75	12.00
17.85	61.89	246.59	455.10	3,938.30	10.22	15.971	8.654	18.20	10.51
24 x 16 x 30.6	100.09	361.65	492.31	5,134.08	10.24	14.196	10.429	29.44	18.00
25.5	83.67	310.07	475.40	4,621.30	10.23	14.904	9.721	24.61	15.00
20.4	67.15	255.55	457.85	4,038.76	10.14	15.804	8.821	19.75	12.00
17.85	58.92	227.32	448.80	3,715.75	10.04	16.346	8.279	17.33	10.51
24 x 14 x 30.6	94.99	330.65	484.24	4,838.40	10.10	14.633	9.992	27.94	18.00
25.5	79.42	283.60	467.68	4,347.36	10.07	15.329	9.296	23.36	15.00
20.4	63.75	233.83	450.46	3,790.49	9.95	16.210	8.415	18.75	12.00
17.85	55.94	208.05	441.55	3,482.37	9.84	16.738	7.887	16.45	10.51
24 x 12 x 30.6	89.89	299.60	474.83	4,523.44	9.92	15.098	9.527	26.44	18.00
25.5	75.17	257.09	458.68	4,056.97	9.87	15.780	8.845	22.11	15.00
20.4	60.35	212.10	441.85	3,528.91	9.73	16.638	7.987	17.75	12.00
17.85	52.96	188.76	433.12	3,237.34	9.60	17.150	7.475	15.58	10.51
24 x 10 x 30.6	84.79	268.50	463.71	4,187.23	9.70	15.595	9.030	24.94	18.00
25.5	70.92	230.56	448.07	3,748.62	9.63	16.259	8.366	20.86	15.00
20.4	56.95	190.34	431.71	3,252.91	9.47	17.090	7.535	16.75	12.00
17.85	49.98	169.46	423.19	2,979.78	9.33	17.584	7.041	14.70	10.51
24 x 8 x 30.6	79.69	237.35	450.38	3,827.55	9.44	16.126	8.499	23.44	18.00
25.5	66.67	203.99	435.36	3,420.57	9.35	16.768	7.857	19.61	15.00
20.4	53.55	168.57	419.58	2,961.26	9.16	17.567	7.058	15.75	12.00
17.85	47.00	150.15	411.33	2,708.68	9.01	18.040	6.585	13.82	10.51



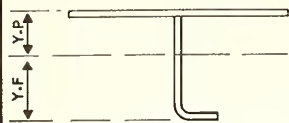
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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25.5 # PLATE WEIGHT

STEEL

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	Y F	Y P	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 6 x 30.6	74.59	206.14	434.10	3,441.85	9.11	16.696	7.929	21.94	18.00
25.5	62.42	177.39	419.86	3,070.88	9.00	17.311	7.314	18.36	15.00
20.4	50.15	146.78	404.83	2,652.60	8.80	18.073	6.552	14.75	12.00
17.85	44.02	130.83	396.91	2,422.96	8.64	18.520	6.105	12.95	10.51
21 x 20 x 30.6	102.64	360.54	433.67	4,257.29	9.25	11.808	9.817	30.19	15.75
25.5	85.80	308.97	420.22	3,850.44	9.27	12.462	9.163	25.23	13.12
20.4	68.85	254.42	406.19	3,382.90	9.22	13.297	8.328	20.25	10.50
17.85	60.40	226.17	398.90	3,121.25	9.15	13.800	7.825	17.77	9.20
21 x 18 x 30.6	97.54	333.37	428.60	4,055.05	9.17	12.164	9.461	28.69	15.75
25.5	81.55	285.73	415.32	3,660.58	9.17	12.811	8.814	23.98	13.12
20.4	65.45	235.33	401.43	3,208.28	9.10	13.633	7.992	19.25	10.50
17.85	57.43	209.23	394.21	2,955.77	9.01	14.127	7.498	16.89	9.20
21 x 16 x 30.6	92.44	306.15	422.77	3,839.82	9.07	12.542	9.083	27.19	15.75
25.5	77.30	262.46	409.69	3,459.49	9.05	13.181	8.444	22.73	13.12
20.4	62.05	216.23	395.98	3,024.42	8.95	13.987	7.638	18.25	10.50
17.85	54.45	192.27	388.82	2,782.13	8.85	14.470	7.155	16.01	9.20
21 x 14 x 30.6	87.34	278.87	415.98	3,610.31	8.94	12.946	8.679	25.69	15.75
25.5	73.05	239.16	403.15	3,246.15	8.90	13.573	8.052	21.48	13.12
20.4	58.65	197.10	389.65	2,830.55	8.77	14.361	7.264	17.25	10.50
17.85	51.47	175.30	382.58	2,599.72	8.66	14.830	6.795	15.14	9.20
21 x 12 x 30.6	82.24	251.55	408.00	3,365.06	8.77	13.377	8.248	24.19	15.75
25.5	68.80	215.83	395.46	3,019.40	8.71	13.990	7.635	20.23	13.12
20.4	55.25	177.96	382.22	2,625.86	8.57	14.755	6.870	16.25	10.50
17.85	48.49	158.32	375.27	2,407.85	8.44	15.209	6.416	14.26	9.20
21 x 10 x 30.6	77.14	224.17	398.47	3,102.39	8.57	13.839	7.786	22.69	15.75
25.5	64.55	192.46	386.29	2,777.93	8.49	14.434	7.191	18.98	13.12
20.4	51.85	158.80	373.38	2,409.39	8.32	15.172	6.453	15.25	10.50
17.85	45.51	141.33	366.56	2,205.77	8.19	15.608	6.017	13.39	9.20
21 x 8 x 30.6	72.04	196.74	386.90	2,820.37	8.32	14.335	7.290	21.19	15.75
25.5	60.30	169.06	375.18	2,520.27	8.22	14.907	6.718	17.73	13.12
20.4	48.45	139.63	362.68	2,180.11	8.03	15.614	6.011	14.25	10.50
17.85	42.53	124.32	356.04	1,992.65	7.89	16.028	5.597	12.51	9.20
21 x 6 x 30.6	66.94	169.26	372.54	2,516.78	8.01	14.869	6.756	19.69	15.75
25.5	56.05	145.63	361.41	2,244.72	7.89	15.414	6.211	16.48	13.12
20.4	45.05	120.43	349.46	1,936.84	7.69	16.083	5.542	13.25	10.50
17.85	39.56	107.30	343.05	1,767.54	7.53	16.473	5.152	11.63	9.20
18 x 18 x 30.6	89.89	276.66	359.90	2,913.32	7.96	10.530	8.095	26.44	13.50
25.5	75.17	237.18	350.08	2,633.35	7.95	11.103	7.522	22.11	11.25
20.4	60.35	195.31	339.66	2,309.58	7.87	11.825	6.800	17.75	9.00
15.3	45.42	150.88	328.18	1,925.07	7.65	12.759	5.866	13.36	6.75
18 x 16 x 30.6	84.79	253.23	355.17	2,753.34	7.87	10.873	7.752	24.94	13.50
25.5	70.92	217.13	345.47	2,483.27	7.84	11.437	7.188	20.86	11.25
20.4	56.95	178.84	335.13	2,171.88	7.74	12.144	6.481	16.75	9.00
15.3	42.87	138.19	323.69	1,803.76	7.49	13.052	5.573	12.61	6.75
18 x 14 x 30.6	79.69	229.75	349.62	2,582.19	7.75	11.239	7.386	23.44	13.50
25.5	66.67	197.05	340.06	2,323.60	7.71	11.792	6.833	19.61	11.25
20.4	53.55	162.35	329.84	2,026.38	7.58	12.481	6.144	15.75	9.00
15.3	40.32	125.50	318.44	1,676.66	7.31	13.360	5.265	11.86	6.75
18 x 12 x 30.6	74.59	206.21	343.02	2,398.67	7.61	11.632	6.993	21.94	13.50
25.5	62.42	176.93	333.64	2,153.40	7.54	12.171	6.454	18.36	11.25
20.4	50.15	145.84	323.57	1,872.38	7.39	12.838	5.787	14.75	9.00
15.3	37.77	112.80	312.24	1,543.33	7.10	13.682	4.943	11.11	6.75

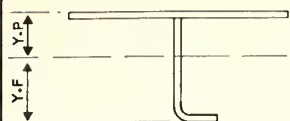


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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25.5 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 10 x 30.6	69.49	182.62	335.05	2,201.38	7.42	12.055	6.570	20.44	13.50
25.5	58.17	156.78	325.90	1,971.58	7.34	12.575	6.050	17.11	11.25
20.4	46.75	129.32	316.01	1,709.14	7.17	13.217	5.408	13.75	9.00
15.3	35.22	100.09	304.80	1,403.31	6.85	14.021	4.604	10.36	6.75
18 x 8 x 30.6	64.39	158.97	325.23	1,988.70	7.19	12.510	6.115	18.94	13.50
25.5	53.92	136.60	316.38	1,776.93	7.09	13.009	5.616	15.86	11.25
20.4	43.35	112.77	306.74	1,535.78	6.90	13.618	5.007	12.75	9.00
15.3	32.67	87.37	295.69	1,256.08	6.57	14.377	4.248	9.61	6.75
18 x 6 x 30.6	59.29	135.26	312.81	1,758.78	6.90	13.003	5.622	17.44	13.50
25.5	49.67	116.38	304.38	1,568.03	6.78	13.473	5.152	14.61	11.25
20.4	39.95	96.21	295.09	1,351.33	6.57	14.046	4.579	11.75	9.00
15.3	30.12	74.64	284.28	1,101.08	6.23	14.752	3.873	8.86	6.75
16 x 12 x 30.6	69.49	177.52	300.68	1,855.68	6.81	10.453	6.172	20.44	12.00
25.5	58.17	152.34	293.17	1,666.66	6.74	10.940	5.685	17.11	10.00
20.4	46.75	125.57	284.94	1,449.07	6.60	11.540	5.085	13.75	8.00
15.3	35.22	97.09	275.45	1,193.48	6.32	12.292	4.333	10.36	6.00
16 x 10 x 30.6	64.39	156.48	293.73	1,697.30	6.64	10.846	5.779	18.94	12.00
25.5	53.92	134.37	286.36	1,520.45	6.55	11.315	5.310	15.86	10.00
20.4	43.35	110.83	278.24	1,317.65	6.39	11.889	4.736	12.75	8.00
15.3	32.67	85.75	268.76	1,080.75	6.09	12.604	4.021	9.61	6.00
16 x 8 x 30.6	59.29	135.39	285.06	1,526.08	6.43	11.271	5.354	17.44	12.00
25.5	49.67	116.36	277.89	1,363.54	6.32	11.718	4.907	14.61	10.00
20.4	39.95	96.06	269.92	1,177.82	6.14	12.261	4.364	11.75	8.00
15.3	30.12	74.39	260.50	962.06	5.82	12.932	3.693	8.86	6.00
15 x 12 x 30.6	66.94	163.64	279.80	1,613.33	6.41	9.859	5.766	19.69	11.25
25.5	56.05	140.46	273.14	1,449.38	6.34	10.319	5.306	16.48	9.37
20.4	45.05	115.79	265.77	1,260.17	6.20	10.883	4.742	13.25	7.50
15.3	33.95	89.52	257.12	1,037.52	5.93	11.590	4.035	9.98	5.62
15 x 11 x 30.6	64.39	153.78	276.74	1,544.52	6.34	10.044	5.581	18.94	11.25
25.5	53.92	132.03	270.13	1,385.68	6.26	10.495	5.130	15.86	9.37
20.4	43.35	108.87	262.78	1,202.75	6.10	11.048	4.577	12.75	7.50
15.3	32.67	84.19	254.12	988.13	5.82	11.737	3.888	9.61	5.62
15 x 10 x 30.6	61.84	143.90	273.34	1,472.98	6.25	10.236	5.389	18.19	11.25
25.5	51.80	123.59	266.79	1,319.69	6.16	10.678	4.947	15.23	9.37
20.4	41.65	101.94	259.48	1,143.52	6.00	11.218	4.407	12.25	7.50
15.3	31.40	78.86	250.80	937.46	5.71	11.887	3.738	9.23	5.62
15 x 9 x 30.6	59.29	134.01	269.53	1,398.53	6.15	10.436	5.189	17.44	11.25
25.5	49.67	115.13	263.05	1,251.28	6.05	10.868	4.757	14.61	9.37
20.4	39.95	95.00	255.78	1,082.40	5.88	11.393	4.232	11.75	7.50
15.3	30.12	73.53	247.10	885.45	5.58	12.042	3.583	8.86	5.62
15 x 8 x 30.6	56.74	124.10	265.24	1,321.00	6.04	10.645	4.980	16.69	11.25
25.5	47.55	106.67	258.84	1,180.32	5.93	11.065	4.560	13.98	9.37
20.4	38.25	88.07	251.63	1,019.30	5.75	11.574	4.051	11.25	7.50
15.3	28.85	68.20	242.95	832.04	5.45	12.200	3.425	8.48	5.62



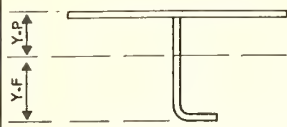
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	847.28	970.06	13,878.96	12.96	14.307	16.381	59.00	30.00
35.7	175.90	819.61	869.02	12,944.07	13.10	14.895	15.793	51.73	26.25
30.6	151.09	763.40	791.53	11,925.48	13.23	15.622	15.066	44.44	22.50
25.5	126.17	652.74	762.93	10,795.24	13.33	16.538	14.150	37.11	18.75
20.4	101.15	536.51	733.62	9,509.76	13.34	17.725	12.963	29.75	15.00
17.85	88.70	476.59	718.69	8,794.05	13.29	18.452	12.236	26.09	13.14
30 x 27 x 40.8	190.40	837.62	896.00	13,285.25	12.91	14.827	15.861	56.00	30.00
35.7	166.97	802.74	810.36	12,375.43	13.04	15.416	15.272	49.11	26.25
30.6	143.44	705.25	782.68	11,384.47	13.15	16.143	14.545	42.19	22.50
25.5	119.80	603.10	754.47	10,285.82	13.21	17.055	13.633	35.23	18.75
20.4	96.05	495.79	725.52	9,038.42	13.19	18.230	12.458	28.25	15.00
17.85	84.23	440.47	710.75	8,345.36	13.13	18.946	11.742	24.77	13.14
30 x 24 x 40.8	180.20	821.75	826.47	12,645.09	12.84	15.388	15.300	53.00	30.00
35.7	158.05	736.32	799.69	11,764.25	12.95	15.977	14.711	46.48	26.25
30.6	135.79	647.00	772.48	10,805.19	13.03	16.700	13.988	39.94	22.50
25.5	113.42	553.40	744.72	9,742.90	13.07	17.605	13.083	33.36	18.75
20.4	90.95	455.05	716.19	8,539.03	13.01	18.765	11.923	26.75	15.00
17.85	79.76	404.32	701.61	7,871.64	12.92	19.469	11.219	23.46	13.14
30 x 21 x 40.8	170.00	747.32	813.46	11,952.80	12.74	15.994	14.694	50.00	30.00
35.7	149.12	669.77	787.24	11,105.57	12.82	16.581	14.107	43.86	26.25
30.6	128.14	588.67	760.58	10,183.43	12.88	17.299	13.389	37.69	22.50
25.5	107.05	503.65	733.36	9,163.07	12.89	18.193	12.495	31.48	18.75
20.4	85.85	414.27	705.32	8,009.02	12.80	19.333	11.355	25.25	15.00
17.85	75.30	368.16	690.97	7,370.76	12.68	20.021	10.667	22.15	13.14
30 x 18 x 40.8	159.80	672.70	798.08	11,201.76	12.59	16.652	14.036	47.00	30.00
35.7	140.20	603.09	772.53	10,393.61	12.66	17.234	13.454	41.23	26.25
30.6	120.49	530.24	746.53	9,514.34	12.69	17.943	12.745	35.44	22.50
25.5	100.67	453.84	719.95	8,542.42	12.66	18.823	11.865	29.61	18.75
20.4	80.75	373.46	692.51	7,445.47	12.53	19.937	10.751	23.75	15.00
17.85	70.83	331.96	678.43	6,840.29	12.40	20.605	10.083	20.83	13.14
30 x 15 x 40.8	149.60	597.88	779.60	10,384.15	12.39	17.368	13.320	44.00	30.00
35.7	131.27	536.26	754.88	9,621.65	12.43	17.942	12.746	38.61	26.25
30.6	112.84	471.73	729.69	8,792.30	12.44	18.639	12.049	33.19	22.50
25.5	94.30	403.97	703.88	7,876.50	12.38	19.498	11.190	27.73	18.75
20.4	75.65	332.61	677.18	6,845.10	12.21	20.580	10.108	22.25	15.00
17.85	66.36	295.75	663.44	6,277.54	12.06	21.226	9.462	19.52	13.14
30 x 12 x 40.8	139.40	522.88	757.00	9,490.69	12.11	18.151	12.537	41.00	30.00
35.7	122.35	469.30	733.30	8,781.76	12.13	18.712	11.976	35.98	26.25
30.6	105.19	413.11	709.12	8,010.76	12.11	19.391	11.297	30.94	22.50
25.5	87.92	354.04	684.28	7,160.17	12.02	20.224	10.464	25.86	18.75
20.4	70.55	291.74	658.50	6,204.19	11.82	21.266	9.422	20.75	15.00
17.85	61.89	259.51	645.18	5,679.47	11.65	21.885	8.803	18.20	13.14
30 x 9 x 40.8	129.20	447.69	728.71	8,510.33	11.75	19.009	11.679	38.00	30.00
35.7	113.42	402.20	706.33	7,864.56	11.74	19.554	11.134	33.36	26.25
30.6	97.54	354.41	683.43	7,162.05	11.70	20.208	10.480	28.69	22.50
25.5	81.55	304.05	659.85	6,387.46	11.58	21.008	9.680	23.98	18.75
20.4	65.45	250.83	635.25	5,518.47	11.34	22.001	8.687	19.25	15.00
17.85	57.43	223.25	622.48	5,042.65	11.15	22.587	8.101	16.89	13.14
30 x 6 x 40.8	119.00	372.31	692.29	7,429.73	11.25	19.956	10.732	35.00	30.00
35.7	104.50	334.97	671.65	6,858.86	11.23	20.476	10.212	30.73	26.25
30.6	89.89	295.61	650.46	6,237.12	11.16	21.099	9.589	26.44	22.50
25.5	75.17	254.01	628.52	5,551.45	11.01	21.855	8.833	22.11	18.75
20.4	60.35	209.89	605.51	4,783.08	10.75	22.789	7.899	17.75	15.00
17.85	52.96	186.97	593.47	4,363.18	10.54	23.336	7.352	15.58	13.14
27 x 27 x 40.8	180.20	737.92	790.67	10,568.28	11.74	13.366	14.322	53.00	27.00
35.7	158.05	708.55	715.84	9,859.37	11.86	13.915	13.773	46.48	23.62
30.6	135.79	622.53	693.36	9,082.24	11.95	14.589	13.099	39.94	20.25



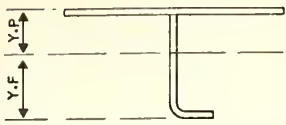
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	532.28	670.37	8,214.97	12.00	15.434	12.254	33.36	16.87
20.4	90.95	437.38	646.64	7,223.96	11.97	16.516	11.172	26.75	13.50
17.85	79.76	388.44	634.46	6,670.96	11.90	17.174	10.514	23.46	11.83
27 x 24 x 40.8	170.00	723.62	728.46	10,051.18	11.68	13.890	13.798	50.00	27.00
35.7	149.12	648.52	706.75	9,363.86	11.78	14.439	13.249	43.86	23.62
30.6	128.14	569.86	684.62	8,610.87	11.85	15.110	12.578	37.69	20.25
25.5	107.05	487.32	661.96	7,771.62	11.87	15.948	11.740	31.48	16.87
20.4	85.85	400.52	638.53	6,814.87	11.80	17.015	10.673	25.25	13.50
17.85	75.30	355.74	626.47	6,282.39	11.71	17.660	10.028	22.15	11.83
27 x 21 x 40.8	159.80	656.37	717.36	9,490.20	11.59	14.459	13.229	47.00	27.00
35.7	140.20	588.35	696.08	8,828.29	11.66	15.005	12.683	41.23	23.62
30.6	120.49	517.10	674.37	8,103.61	11.71	15.671	12.017	35.44	20.25
25.5	100.67	442.30	652.10	7,297.07	11.70	16.498	11.190	29.61	16.87
20.4	80.75	363.62	629.03	6,379.89	11.60	17.546	10.142	23.75	13.50
17.85	70.83	323.02	617.13	5,870.87	11.49	18.175	9.513	20.83	11.83
27 x 18 x 40.8	149.60	588.92	704.14	8,879.51	11.46	15.078	12.610	44.00	27.00
35.7	131.27	528.04	683.38	8,247.57	11.51	15.619	12.069	38.61	23.62
30.6	112.84	464.23	662.17	7,556.22	11.53	16.277	11.411	33.19	20.25
25.5	94.30	397.22	640.39	6,787.90	11.49	17.088	10.600	27.73	16.87
20.4	75.65	326.69	617.76	5,916.50	11.35	18.111	9.577	22.25	13.50
17.85	66.36	290.28	606.05	5,434.31	11.22	18.721	8.967	19.52	11.83
27 x 15 x 40.8	139.40	521.28	688.12	8,212.17	11.27	15.754	11.934	41.00	27.00
35.7	122.35	467.59	668.01	7,615.77	11.30	16.287	11.401	35.98	23.62
30.6	105.19	411.27	647.43	6,963.72	11.29	16.932	10.756	30.94	20.25
25.5	87.92	352.08	626.24	6,240.18	11.23	17.724	9.964	25.86	16.87
20.4	70.55	289.72	604.15	5,421.80	11.05	18.714	8.974	20.75	13.50
17.85	61.89	257.51	592.69	4,970.34	10.90	19.302	8.386	18.20	11.83
27 x 12 x 40.8	129.20	453.44	668.32	7,479.92	11.01	16.496	11.192	38.00	27.00
35.7	113.42	407.00	649.02	6,925.80	11.02	17.017	10.671	33.36	23.62
30.6	97.54	358.22	629.24	6,320.30	10.99	17.644	10.044	28.69	20.25
25.5	81.55	306.89	608.81	5,649.35	10.89	18.409	9.279	23.98	16.87
20.4	65.45	252.72	587.42	4,892.53	10.68	19.359	8.329	19.25	13.50
17.85	57.43	224.71	576.26	4,476.32	10.51	19.920	7.768	16.89	11.83
27 x 9 x 40.8	119.00	385.40	643.22	6,672.81	10.67	17.314	10.374	35.00	27.00
35.7	104.50	346.26	624.98	6,169.27	10.65	17.817	9.871	30.73	23.62
30.6	89.89	305.07	606.23	5,619.10	10.59	18.419	9.269	26.44	20.25
25.5	75.17	261.63	586.80	5,010.13	10.46	19.150	8.538	22.11	16.87
20.4	60.35	215.69	566.33	4,324.92	10.22	20.051	7.637	17.75	13.50
17.85	52.96	191.90	555.59	3,949.21	10.03	20.580	7.108	15.58	11.83
27 x 6 x 40.8	108.80	317.16	610.35	5,778.73	10.19	18.220	9.468	32.00	27.00
35.7	95.57	285.38	593.56	5,336.04	10.15	18.698	8.990	28.11	23.62
30.6	82.24	251.82	576.21	4,851.97	10.07	19.268	8.420	24.19	20.25
25.5	68.80	216.31	558.13	4,316.32	9.92	19.954	7.734	20.23	16.87
20.4	55.25	178.63	538.93	3,714.65	9.65	20.795	6.893	16.25	13.50
17.85	48.49	159.06	528.77	3,385.57	9.45	21.285	6.403	14.26	11.83
24 x 24 x 40.8	159.80	628.50	633.47	7,788.77	10.50	12.393	12.295	47.00	24.00
35.7	140.20	563.45	616.35	7,267.12	10.58	12.897	11.791	41.23	21.00
30.6	120.49	495.17	598.83	6,691.56	10.64	13.514	11.174	35.44	18.00
25.5	100.67	423.39	580.79	6,045.58	10.65	14.279	10.409	29.61	15.00
20.4	80.75	347.84	561.99	5,304.32	10.58	15.249	9.439	23.75	12.00
17.85	70.83	308.85	552.22	4,890.04	10.48	15.833	8.855	20.83	10.51
24 x 22 x 40.8	153.00	588.54	627.46	7,497.49	10.45	12.739	11.949	45.00	24.00
35.7	134.25	527.67	610.54	6,987.79	10.52	13.243	11.445	39.48	21.00
30.6	115.39	463.76	593.21	6,425.81	10.56	13.856	10.832	33.94	18.00
25.5	96.42	396.58	575.35	5,795.86	10.55	14.614	10.074	28.36	15.00
20.4	77.35	325.86	556.69	5,074.47	10.46	15.573	9.115	22.75	12.00
17.85	67.85	289.36	546.99	4,672.17	10.35	16.146	8.542	19.96	10.51

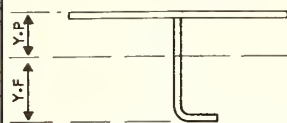


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

50t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	548.50	620.69	7,188.75	10.38	13.106	11.582	43.00	24.00
35.7	128.30	491.82	604.00	6,692.54	10.44	13.608	11.080	37.73	21.00
30.6	110.29	432.31	586.90	6,145.85	10.47	14.216	10.472	32.44	18.00
25.5	92.17	369.75	569.24	5,533.84	10.44	14.967	9.721	27.11	15.00
20.4	73.95	303.86	550.75	4,834.50	10.32	15.910	8.778	21.75	12.00
17.85	64.87	269.86	541.12	4,445.38	10.20	16.473	8.215	19.08	10.51
24 x 18 x 40.8	139.40	508.36	613.03	6,860.92	10.30	13.496	11.192	41.00	24.00
35.7	122.35	455.90	596.60	6,379.98	10.34	13.994	10.694	35.98	21.00
30.6	105.19	400.82	579.75	5,850.52	10.35	14.596	10.092	30.94	18.00
25.5	87.92	342.88	562.32	5,258.60	10.30	15.336	9.352	25.86	15.00
20.4	70.55	281.86	544.04	4,583.72	10.16	16.263	8.425	20.75	12.00
17.85	61.89	250.35	534.48	4,209.10	10.03	16.813	7.875	18.20	10.51
24 x 16 x 40.8	132.60	468.14	604.26	6,512.18	10.19	13.911	10.777	39.00	24.00
35.7	116.40	419.92	588.14	6,048.53	10.22	14.404	10.284	34.23	21.00
30.6	100.09	369.28	571.58	5,538.50	10.21	14.998	9.690	29.44	18.00
25.5	83.67	315.99	554.43	4,969.11	10.15	15.725	8.963	24.61	15.00
20.4	67.15	259.83	536.38	4,321.39	9.98	16.631	8.057	19.75	12.00
17.85	58.92	230.83	526.92	3,962.72	9.83	17.167	7.521	17.33	10.51
24 x 14 x 40.8	125.80	427.82	594.14	6,140.45	10.06	14.353	10.335	37.00	24.00
35.7	110.45	383.88	578.38	5,696.42	10.07	14.839	9.849	32.48	21.00
30.6	94.99	337.69	562.17	5,208.35	10.05	15.423	9.265	27.94	18.00
25.5	79.42	289.07	545.34	4,664.22	9.96	16.135	8.553	23.36	15.00
20.4	63.75	237.79	527.58	4,046.69	9.77	17.018	7.670	18.75	12.00
17.85	55.94	211.29	518.23	3,705.58	9.61	17.538	7.150	16.45	10.51
24 x 12 x 40.8	119.00	387.40	582.33	5,743.38	9.89	14.825	9.863	35.00	24.00
35.7	104.50	347.77	567.01	5,321.67	9.89	15.302	9.386	30.73	21.00
30.6	89.89	306.07	551.21	4,858.43	9.85	15.874	8.814	26.44	18.00
25.5	75.17	262.13	534.76	4,342.69	9.74	16.567	8.121	22.11	15.00
20.4	60.35	215.74	517.34	3,758.73	9.53	17.423	7.265	17.75	12.00
17.85	52.96	191.75	508.14	3,436.96	9.36	17.924	6.764	15.58	10.51
24 x 10 x 40.8	112.20	346.90	568.37	5,318.30	9.69	15.331	9.357	33.00	24.00
35.7	98.55	311.59	553.57	4,922.02	9.67	15.797	8.891	28.98	21.00
30.6	84.79	274.39	538.27	4,486.92	9.61	16.352	8.336	24.94	18.00
25.5	70.92	235.15	522.30	4,003.11	9.48	17.024	7.664	20.86	15.00
20.4	56.95	193.67	505.30	3,456.51	9.25	17.847	6.841	16.75	12.00
17.85	49.98	172.20	496.27	3,156.07	9.07	18.328	6.360	14.70	10.51
24 x 8 x 40.8	105.40	306.30	551.61	4,862.13	9.43	15.874	8.814	31.00	24.00
35.7	92.60	275.34	537.45	4,494.89	9.40	16.325	8.363	27.23	21.00
30.6	79.69	242.68	522.77	4,091.75	9.32	16.861	7.827	23.44	18.00
25.5	66.67	208.15	507.38	3,643.92	9.18	17.506	7.182	19.61	15.00
20.4	53.55	171.59	490.92	3,138.97	8.92	18.294	6.394	15.75	12.00
17.85	47.00	152.63	482.12	2,862.06	8.74	18.752	5.936	13.82	10.51
24 x 6 x 40.8	98.60	265.62	531.10	4,371.32	9.11	16.457	8.231	29.00	24.00
35.7	86.65	239.03	517.76	4,037.35	9.06	16.890	7.798	25.48	21.00
30.6	74.59	210.91	503.87	3,670.59	8.97	17.403	7.285	21.94	18.00
25.5	62.42	181.12	489.23	3,263.35	8.81	18.018	6.670	18.36	15.00
20.4	50.15	149.49	473.45	2,804.89	8.54	18.764	5.924	14.75	12.00
17.85	44.02	133.05	464.95	2,553.98	8.35	19.195	5.493	12.95	10.51
21 x 20 x 40.8	136.00	466.26	531.05	5,384.61	9.20	11.548	10.140	40.00	21.00
35.7	119.37	418.25	518.32	5,020.13	9.24	12.003	9.685	35.11	18.37
30.6	102.64	367.72	505.19	4,615.53	9.26	12.552	9.136	30.19	15.75
25.5	85.80	314.49	491.52	4,159.33	9.22	13.226	8.462	25.23	13.12
20.4	68.85	258.36	477.02	3,634.72	9.10	14.068	7.620	20.25	10.50
17.85	60.40	229.39	469.34	3,341.70	8.98	14.568	7.120	17.77	9.20
21 x 18 x 40.8	129.20	431.05	524.72	5,132.39	9.12	11.907	9.781	38.00	21.00
35.7	113.42	386.71	512.17	4,778.77	9.15	12.358	9.330	33.36	18.37
30.6	97.54	340.03	499.21	4,386.67	9.15	12.901	8.787	28.69	15.75



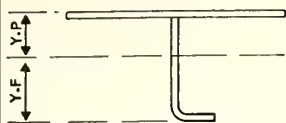
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	290.86	485.68	3,945.38	9.10	13.565	8.123	23.98	13.12
20.4	65.45	239.00	471.28	3,439.30	8.95	14.390	7.298	19.25	10.50
17.85	57.43	212.22	463.65	3,157.42	8.82	14.878	6.810	16.89	9.20
21 x 16 x 40.8	122.40	395.74	517.43	4,863.27	9.03	12.289	9.399	36.00	21.00
35.7	107.47	355.10	505.09	4,522.13	9.05	12.735	8.953	31.61	18.37
30.6	92.44	312.30	492.33	4,144.32	9.03	13.270	8.418	27.19	15.75
25.5	77.30	267.20	478.97	3,719.90	8.95	13.922	7.766	22.73	13.12
20.4	62.05	219.63	464.71	3,234.56	8.78	14.728	6.960	18.25	10.50
17.85	54.45	195.05	457.11	2,965.01	8.64	15.202	6.486	16.01	9.20
21 x 14 x 40.8	115.60	360.33	508.95	4,575.50	8.91	12.698	8.990	34.00	21.00
35.7	101.52	323.42	496.87	4,248.72	8.91	13.137	8.551	29.86	18.37
30.6	87.34	284.53	484.34	3,887.24	8.87	13.662	8.026	25.69	15.75
25.5	73.05	243.52	471.19	3,481.94	8.78	14.298	7.390	21.48	13.12
20.4	58.65	200.23	457.10	3,019.82	8.59	15.081	6.991	17.07	10.50
17.85	51.47	177.86	449.55	2,763.92	8.44	15.540	6.148	15.14	9.20
21 x 12 x 40.8	108.80	324.83	498.97	4,267.05	8.76	13.136	8.552	32.00	21.00
35.7	95.57	291.67	487.19	3,956.83	8.74	13.566	8.122	28.11	18.37
30.6	82.24	256.70	474.95	3,614.04	8.69	14.079	7.609	24.19	15.75
25.5	68.80	219.81	462.06	3,230.43	8.58	14.697	6.991	20.23	13.12
20.4	55.25	180.83	448.17	2,794.31	8.37	15.453	6.235	16.25	10.50
17.85	48.49	160.66	440.70	2,553.53	8.21	15.894	5.794	14.26	9.20
21 x 10 x 40.8	102.00	289.23	487.04	3,935.63	8.56	13.607	8.081	30.00	21.00
35.7	89.62	259.85	475.64	3,644.53	8.54	14.026	7.662	26.36	18.37
30.6	77.14	228.84	463.75	3,323.17	8.47	14.522	7.166	22.69	15.75
25.5	64.55	196.07	451.18	2,964.19	8.34	15.118	6.570	18.98	13.12
20.4	51.85	161.40	437.56	2,557.22	8.11	15.844	5.844	15.25	10.50
17.85	45.51	143.45	430.19	2,333.20	7.94	16.264	5.424	13.39	9.20
21 x 8 x 40.8	95.20	253.54	472.52	3,578.57	8.32	14.115	7.573	28.00	21.00
35.7	83.67	227.96	461.60	3,309.59	8.28	14.518	7.170	24.61	18.37
30.6	72.04	200.92	450.16	3,012.85	8.20	14.995	6.693	21.19	15.75
25.5	60.30	172.30	438.01	2,681.86	8.05	15.565	6.123	17.73	13.12
20.4	48.45	141.96	424.74	2,307.62	7.80	16.255	5.433	14.25	10.50
17.85	42.53	126.24	417.51	2,102.19	7.62	16.653	5.035	12.51	9.20
21 x 6 x 40.8	88.40	217.74	454.48	3,192.76	8.02	14.663	7.025	26.00	21.00
35.7	77.72	196.01	444.18	2,949.46	7.96	15.048	6.640	22.86	18.37
30.6	66.94	172.96	433.34	2,681.06	7.86	15.501	6.187	19.69	15.75
25.5	56.05	148.50	421.74	2,381.96	7.70	16.040	5.648	16.48	13.12
20.4	45.05	122.51	408.95	2,044.50	7.44	16.689	4.999	13.25	10.50
17.85	39.56	109.01	401.90	1,859.72	7.26	17.061	4.627	11.63	9.20
18 x 18 x 40.8	119.00	357.02	439.19	3,680.26	7.92	10.308	8.380	35.00	18.00
35.7	104.50	320.50	430.05	3,431.84	7.94	10.708	7.980	30.73	15.75
30.6	89.89	281.93	420.50	3,154.04	7.93	11.187	7.501	26.44	13.50
25.5	75.17	241.19	410.40	2,838.96	7.88	11.770	6.918	22.11	11.25
20.4	60.35	198.16	399.42	2,475.24	7.73	12.491	6.197	17.75	9.00
15.3	45.42	152.69	386.88	2,046.01	7.43	13.399	5.289	13.36	6.75
18 x 16 x 40.8	112.20	326.71	433.30	3,480.90	7.84	10.654	8.034	33.00	18.00
35.7	98.55	293.32	424.28	3,241.00	7.85	11.049	7.639	28.98	15.75
30.6	84.79	258.07	414.85	2,973.20	7.82	11.521	7.167	24.94	13.50
25.5	70.92	220.82	404.83	2,670.20	7.74	12.092	6.596	20.86	11.25
20.4	56.95	181.47	393.89	2,321.67	7.58	12.794	5.894	16.75	9.00
15.3	42.87	139.87	381.30	1,912.38	7.26	13.673	5.015	12.61	6.75
18 x 14 x 40.8	105.40	296.30	426.38	3,266.96	7.73	11.026	7.662	31.00	18.00
35.7	92.60	266.08	417.52	3,037.05	7.72	11.414	7.274	27.23	15.75
30.6	79.69	234.16	408.23	2,780.84	7.68	11.876	6.812	23.44	13.50
25.5	66.67	200.42	398.31	2,491.70	7.59	12.432	6.256	19.61	11.25
20.4	53.55	164.76	387.44	2,160.31	7.40	13.112	5.576	15.75	9.00
15.3	40.32	127.04	374.81	1,773.11	7.06	13.957	4.731	11.86	6.75



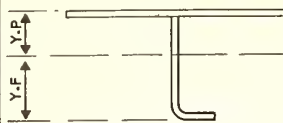
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	265.78	418.16	3,036.79	7.59	11.426	7.262	29.00	18.00
35.7	86.65	238.76	409.49	2,818.58	7.57	11.805	6.883	25.48	15.75
30.6	74.59	210.20	400.37	2,575.83	7.52	12.254	6.434	21.94	13.50
25.5	62.42	179.99	390.59	2,302.59	7.40	12.793	5.895	18.36	11.25
20.4	50.15	148.03	379.80	1,990.55	7.20	13.447	5.241	14.75	9.00
15.3	37.77	114.20	367.15	1,627.82	6.84	14.254	4.434	11.11	6.75
18 x 10 x 40.8	91.80	235.17	408.21	2,788.45	7.42	11.857	6.831	27.00	18.00
35.7	80.70	211.38	399.79	2,583.99	7.38	12.225	6.463	23.73	15.75
30.6	69.49	186.19	390.88	2,356.88	7.31	12.658	6.030	20.44	13.50
25.5	58.17	159.53	381.29	2,101.88	7.18	13.175	5.513	17.11	11.25
20.4	46.75	131.29	370.62	1,811.71	6.96	13.800	4.888	13.75	9.00
15.3	35.22	101.35	357.97	1,476.14	6.59	14.564	4.124	10.36	6.75
18 x 8 x 40.8	85.00	204.46	395.92	2,519.72	7.20	12.324	6.364	25.00	18.00
35.7	74.75	183.92	387.82	2,331.42	7.15	12.676	6.012	21.98	15.75
30.6	64.39	162.14	379.21	2,122.52	7.06	13.091	5.597	18.94	13.50
25.5	53.92	139.04	369.88	1,888.47	6.91	13.582	5.106	15.86	11.25
20.4	43.35	114.53	359.38	1,623.06	6.68	14.172	4.516	12.75	9.00
15.3	32.67	88.50	346.78	1,317.61	6.29	14.888	3.800	9.61	6.75
18 x 6 x 40.8	78.20	173.65	380.36	2,227.97	6.91	12.831	5.857	23.00	18.00
35.7	68.80	156.39	372.71	2,058.72	6.85	13.164	5.524	20.23	15.75
30.6	59.29	138.04	364.51	1,871.06	6.75	13.555	5.133	17.44	13.50
25.5	49.67	118.52	355.53	1,661.14	6.59	14.016	4.672	14.61	11.25
20.4	39.95	97.75	345.31	1,423.75	6.34	14.565	4.123	11.75	9.00
15.3	30.12	75.64	332.83	1,151.78	5.95	15.227	3.461	8.86	6.75



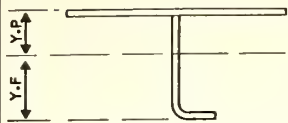
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	960.44	990.48	14,994.18	13.12	15.138	15.612	59.00	30.00
35.7	175.90	886.24	932.83	13,974.93	13.23	15.769	14.981	51.73	26.25
30.6	151.09	777.41	904.71	12,857.26	13.31	16.539	14.211	44.44	22.50
25.5	126.17	663.60	875.94	11,610.01	13.34	17.496	13.254	37.11	18.75
20.4	101.15	544.33	846.20	10,185.92	13.27	18.713	12.037	29.75	15.00
17.85	88.70	482.99	830.91	9,392.34	13.16	19.446	11.304	26.09	13.14
30 x 27 x 40.8	190.40	914.94	949.53	14,328.17	13.05	15.660	15.090	56.00	30.00
35.7	166.97	818.72	922.31	13,336.80	13.14	16.290	14.460	49.11	26.25
30.6	143.44	718.26	894.57	12,250.51	13.20	17.056	13.694	42.19	22.50
25.5	119.80	613.19	866.16	11,039.95	13.20	18.004	12.746	35.23	18.75
20.4	96.05	503.07	836.74	9,660.98	13.09	19.204	11.546	28.25	15.00
17.85	84.23	446.42	821.57	8,894.48	12.97	19.924	10.826	24.77	13.14
30 x 24 x 40.8	180.20	839.22	936.94	13,612.92	12.95	16.221	14.529	53.00	30.00
35.7	158.05	751.08	910.18	12,653.77	13.02	16.848	13.902	46.48	26.25
30.6	135.79	659.03	882.89	11,603.65	13.06	17.607	13.143	39.94	22.50
25.5	113.42	562.73	854.89	10,435.13	13.03	18.544	12.206	33.36	18.75
20.4	90.95	461.78	825.84	9,107.33	12.88	19.722	11.028	26.75	15.00
17.85	79.76	409.84	810.84	8,371.26	12.74	20.426	10.324	23.46	13.14
30 x 21 x 40.8	170.00	763.33	922.25	12,842.76	12.82	16.825	13.925	50.00	30.00
35.7	149.12	683.31	896.04	11,920.94	12.87	17.446	13.304	43.86	26.25
30.6	128.14	599.71	869.27	10,912.57	12.88	18.196	12.554	37.69	22.50
25.5	107.05	512.23	841.77	9,792.27	12.82	19.117	11.633	31.48	18.75
20.4	85.85	420.47	813.17	8,522.58	12.64	20.269	10.481	25.25	15.00
17.85	75.30	373.23	798.35	7,820.69	12.47	20.954	9.796	22.15	13.14
30 x 18 x 40.8	159.80	687.27	904.89	12,011.10	12.64	17.476	13.274	47.00	30.00
35.7	140.20	615.42	879.33	11,132.66	12.67	18.090	12.660	41.23	26.25
30.6	120.49	540.31	853.20	10,172.57	12.65	18.827	11.923	35.44	22.50
25.5	100.67	461.67	826.30	9,107.65	12.56	19.728	11.022	29.61	18.75
20.4	80.75	379.12	798.24	7,904.00	12.34	20.848	9.902	23.75	15.00
17.85	70.83	336.61	783.65	7,240.57	12.16	21.510	9.240	20.83	13.14
30 x 15 x 40.8	149.60	611.04	884.06	11,110.28	12.41	18.183	12.567	44.00	30.00
35.7	131.27	547.40	859.30	10,282.37	12.41	18.784	11.966	38.61	26.25
30.6	112.84	480.83	833.94	9,378.27	12.37	19.504	11.246	33.19	22.50
25.5	94.30	411.05	807.78	8,377.08	12.25	20.379	10.371	27.73	18.75
20.4	75.65	337.75	780.39	7,248.59	12.00	21.462	9.288	22.25	15.00
17.85	66.36	299.96	766.09	6,628.45	11.80	22.098	8.652	19.52	13.14
30 x 12 x 40.8	139.40	534.63	858.59	10,131.30	12.11	18.950	11.800	41.00	30.00
35.7	122.35	479.26	834.83	9,362.47	12.08	19.535	11.215	35.98	26.25
30.6	105.19	421.26	810.45	8,523.45	12.01	20.233	10.517	30.94	22.50
25.5	87.92	360.39	785.21	7,595.76	11.86	21.076	9.674	25.86	18.75
20.4	70.55	296.35	758.67	6,552.95	11.58	22.113	8.637	20.75	15.00
17.85	61.89	263.30	744.74	5,981.60	11.36	22.718	8.032	18.20	13.14
30 x 9 x 40.8	129.20	458.05	826.74	9,063.51	11.71	19.787	10.963	38.00	30.00
35.7	113.42	411.00	804.28	8,364.03	11.66	20.351	10.399	33.36	26.25
30.6	97.54	361.61	781.15	7,600.94	11.57	21.019	9.731	28.69	22.50
25.5	81.55	309.68	757.10	6,758.22	11.39	21.824	8.926	23.98	18.75
20.4	65.45	254.91	731.67	5,813.27	11.08	22.805	7.945	19.25	15.00
17.85	57.43	226.61	718.24	5,297.00	10.85	23.375	7.375	16.89	13.14
30 x 6 x 40.8	119.00	381.30	785.79	7,894.24	11.18	20.704	10.046	35.00	30.00
35.7	104.50	342.61	765.04	7,276.55	11.12	21.239	9.511	30.73	26.25
30.6	89.89	301.88	743.58	6,602.35	11.00	21.871	8.879	26.44	22.50
25.5	75.17	258.91	721.14	5,858.17	10.80	22.626	8.124	22.11	18.75
20.4	60.35	213.46	697.19	5,025.21	10.47	23.542	7.208	17.75	15.00
17.85	52.96	189.90	684.44	4,571.23	10.23	24.071	6.679	15.58	13.14
27 x 27 x 40.8	180.20	806.99	839.07	11,415.19	11.86	14.145	13.605	53.00	27.00
35.7	158.05	722.24	817.01	10,638.03	11.94	14.729	13.021	46.48	23.62
30.6	135.79	633.61	794.45	9,781.46	11.99	15.438	12.312	39.94	20.25



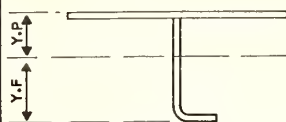
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	540.80	771.22	8,821.43	11.98	16.312	11.438	33.36	16.87
20.4	90.95	443.48	746.98	7,722.09	11.86	17.412	10.338	26.75	13.50
17.85	79.76	393.42	734.38	7,109.01	11.74	18.070	9.680	23.46	11.83
27 x 24 x 40.8	170.00	738.61	828.32	10,834.90	11.78	14.669	13.081	50.00	27.00
35.7	149.12	661.10	806.60	10,082.14	11.83	15.250	12.500	43.86	23.62
30.6	128.14	580.05	784.37	9,253.40	11.86	15.953	11.797	37.69	20.25
25.5	107.05	495.17	761.44	8,326.31	11.82	16.815	10.935	31.48	16.87
20.4	85.85	406.15	737.45	7,267.82	11.67	17.895	9.855	25.25	13.50
17.85	75.30	360.34	724.94	6,679.34	11.53	18.536	9.214	22.15	11.83
27 x 21 x 40.8	159.80	670.04	815.70	10,208.28	11.66	15.235	12.515	47.00	27.00
35.7	140.20	599.84	794.39	9,484.19	11.69	15.811	11.939	41.23	23.62
30.6	120.49	526.41	772.55	8,687.97	11.69	16.504	11.246	35.44	20.25
25.5	100.67	449.49	749.97	7,799.05	11.62	17.351	10.399	29.61	16.87
20.4	80.75	368.78	726.29	6,787.29	11.44	18.405	9.345	23.75	13.50
17.85	70.83	327.23	713.89	6,226.61	11.28	19.028	8.722	20.83	11.83
27 x 18 x 40.8	149.60	601.30	800.68	9,529.56	11.49	15.848	11.902	44.00	27.00
35.7	131.27	538.46	779.87	8,839.20	11.51	16.416	11.334	38.61	23.62
30.6	112.84	472.69	758.50	8,081.05	11.48	17.096	10.654	33.19	20.25
25.5	94.30	403.75	736.37	7,236.39	11.38	17.923	9.827	27.73	16.87
20.4	75.65	331.38	713.05	6,278.14	11.16	18.945	8.805	22.25	13.50
17.85	66.36	294.11	700.81	5,748.90	10.98	19.547	8.203	19.52	11.83
27 x 15 x 40.8	139.40	532.39	782.50	8,791.94	11.28	16.514	11.236	41.00	27.00
35.7	122.35	476.94	762.31	8,141.42	11.27	17.070	10.680	35.98	23.62
30.6	105.19	418.87	741.53	7,427.90	11.21	17.733	10.017	30.94	20.25
25.5	87.92	357.96	719.94	6,634.65	11.09	18.534	9.216	25.86	16.87
20.4	70.55	293.95	697.10	5,737.74	10.83	19.519	8.231	20.75	13.50
17.85	61.89	260.97	685.05	5,244.10	10.64	20.095	7.655	18.20	11.83
27 x 12 x 40.8	129.20	463.29	760.04	7,987.42	10.99	17.241	10.509	38.00	27.00
35.7	113.42	415.30	740.64	7,384.06	10.96	17.780	9.970	33.36	23.62
30.6	97.54	364.97	720.62	6,723.01	10.88	18.420	9.330	28.69	20.25
25.5	81.55	312.12	699.73	5,989.61	10.72	19.190	8.560	23.98	16.87
20.4	65.45	256.50	677.51	5,163.12	10.44	20.129	7.621	19.25	13.50
17.85	57.43	227.80	665.71	4,709.83	10.23	20.675	7.075	16.89	11.83
27 x 9 x 40.8	119.00	394.01	731.60	7,106.45	10.61	18.036	9.714	35.00	27.00
35.7	104.50	353.53	713.23	6,559.17	10.56	18.554	9.196	30.73	23.62
30.6	89.89	310.99	694.20	5,960.01	10.45	19.165	8.585	26.44	20.25
25.5	75.17	266.22	674.25	5,296.42	10.27	19.895	7.855	22.11	16.87
20.4	60.35	219.01	652.87	4,550.93	9.96	20.779	6.971	17.75	13.50
17.85	52.96	194.62	641.41	4,143.43	9.74	21.290	6.460	15.58	11.83
27 x 6 x 40.8	108.80	324.54	694.41	6,137.59	10.10	18.911	8.839	32.00	27.00
35.7	95.57	291.62	677.46	5,657.28	10.03	19.399	8.351	28.11	23.62
30.6	82.24	256.92	659.80	5,131.37	9.90	19.973	7.777	24.19	20.25
25.5	68.80	220.27	641.13	4,549.49	9.70	20.654	7.096	20.23	16.87
20.4	55.25	181.50	620.92	3,897.35	9.37	21.473	6.277	16.25	13.50
17.85	48.49	161.41	609.98	3,541.91	9.14	21.943	5.807	14.26	11.83
24 x 24 x 40.8	159.80	641.16	722.57	8,408.00	10.58	13.114	11.636	47.00	24.00
35.7	140.20	574.01	705.42	7,832.98	10.63	13.646	11.104	41.23	21.00
30.6	120.49	503.66	687.77	7,195.95	10.64	14.287	10.463	35.44	18.00
25.5	100.67	429.89	669.43	6,479.10	10.59	15.071	9.679	29.61	15.00
20.4	80.75	352.46	650.02	5,656.39	10.44	16.048	8.702	23.75	12.00
17.85	70.83	312.62	639.78	5,197.57	10.30	16.626	8.124	20.83	10.51
24 x 22 x 40.8	153.00	600.42	715.68	8,080.91	10.51	13.459	11.291	45.00	24.00
35.7	134.25	537.58	698.72	7,519.65	10.55	13.988	10.762	39.48	21.00
30.6	115.39	471.74	681.24	6,898.54	10.54	14.624	10.126	33.94	18.00
25.5	96.42	402.70	663.05	6,200.75	10.48	15.398	9.352	28.36	15.00
20.4	77.35	330.21	643.75	5,401.88	10.30	16.359	8.391	22.75	12.00
17.85	67.85	292.91	633.53	4,957.45	10.15	16.925	7.825	19.96	10.51

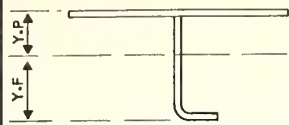


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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30.6 # PLATE WEIGHT

NOMINAL SIZE IN. x IN. x LBS./FT. ²	WEIGHT PER FOOT LBS.	SECTION MODULUS		I IN. ⁴	r IN.	YF IN.	YP IN.	BEAM DIMENSIONS	
		LESSER IN. ³	GREATER IN. ³					AREA IN. ²	SHEAR AREA IN. ²
24 x 20 x 40.8	146.20	559.60	707.93	7,735.44	10.43	13.823	10.927	43.00	24.00
35.7	128.30	501.09	691.18	7,189.67	10.45	14.348	10.402	37.73	21.00
30.6	110.29	439.78	673.90	6,586.39	10.43	14.976	9.774	32.44	18.00
25.5	92.17	375.48	655.88	5,909.80	10.34	15.740	9.010	27.11	15.00
20.4	73.95	307.95	636.71	5,137.17	10.15	16.682	8.068	21.75	12.00
17.85	64.87	273.19	626.53	4,708.42	9.99	17.235	7.515	19.08	10.51
24 x 18 x 40.8	139.40	518.70	699.15	7,369.99	10.33	14.209	10.541	41.00	24.00
35.7	122.35	464.54	682.65	6,841.69	10.33	14.728	10.022	35.98	21.00
30.6	105.19	407.78	665.60	6,258.39	10.29	15.347	9.403	30.94	18.00
25.5	87.92	348.23	647.77	5,605.38	10.19	16.097	8.653	25.86	15.00
20.4	70.55	285.68	628.76	4,861.62	9.97	17.018	7.732	20.75	12.00
17.85	61.89	253.46	618.63	4,449.97	9.80	17.557	7.193	18.20	10.51
24 x 16 x 40.8	132.60	477.71	689.12	6,982.78	10.20	14.617	10.133	39.00	24.00
35.7	116.40	427.94	672.91	6,474.18	10.19	15.129	9.621	34.23	21.00
30.6	100.09	375.75	656.12	5,913.30	10.14	15.737	9.013	29.44	18.00
25.5	83.67	320.96	638.54	5,286.53	10.01	16.471	8.279	24.61	15.00
20.4	67.15	263.39	619.70	4,574.56	9.78	17.368	7.382	19.75	12.00
17.85	58.92	233.73	609.63	4,181.56	9.59	17.891	6.859	17.33	10.51
24 x 14 x 40.8	125.80	436.65	677.55	6,571.78	10.05	15.051	9.699	37.00	24.00
35.7	110.45	391.27	661.68	6,085.45	10.02	15.553	9.197	32.48	21.00
30.6	94.99	343.67	645.21	5,549.75	9.95	16.149	8.601	27.94	18.00
25.5	79.42	293.67	627.91	4,952.20	9.81	16.863	7.887	23.36	15.00
20.4	63.75	241.09	609.30	4,275.26	9.55	17.733	7.017	18.75	12.00
17.85	55.94	213.98	599.30	3,902.60	9.36	18.238	6.512	16.45	10.51
24 x 12 x 40.8	119.00	395.49	664.05	6,134.76	9.86	15.512	9.238	35.00	24.00
35.7	104.50	354.55	648.59	5,673.62	9.82	16.002	8.748	30.73	21.00
30.6	89.89	311.55	632.51	5,166.22	9.73	16.582	8.168	26.44	18.00
25.5	75.17	266.35	615.55	4,601.23	9.57	17.275	7.475	22.11	15.00
20.4	60.35	218.77	597.22	3,962.91	9.29	18.114	6.636	17.75	12.00
17.85	52.96	194.23	587.32	3,612.46	9.09	18.599	6.151	15.58	10.51
24 x 10 x 40.8	112.20	354.26	648.11	5,669.15	9.63	16.003	8.747	33.00	24.00
35.7	98.55	317.77	633.15	5,236.55	9.58	16.479	8.271	28.98	21.00
30.6	84.79	279.40	617.53	4,761.00	9.47	17.040	7.710	24.94	18.00
25.5	70.92	239.01	601.00	4,232.36	9.30	17.708	7.042	20.86	15.00
20.4	56.95	196.44	583.03	3,636.64	9.00	18.513	6.237	16.75	12.00
17.85	49.98	174.46	573.26	3,310.45	8.79	18.975	5.775	14.70	10.51
24 x 8 x 40.8	105.40	312.94	628.99	5,172.05	9.35	16.527	8.223	31.00	24.00
35.7	92.60	280.92	614.65	4,771.86	9.28	16.986	7.764	27.23	21.00
30.6	79.69	247.20	599.62	4,332.21	9.17	17.525	7.225	23.44	18.00
25.5	66.67	211.64	583.63	3,844.16	8.97	18.163	6.587	19.61	15.00
20.4	53.55	174.10	566.12	3,295.50	8.67	18.929	5.821	15.75	12.00
17.85	47.00	154.69	556.53	2,995.82	8.45	19.367	5.383	13.82	10.51
24 x 6 x 40.8	98.60	271.54	605.63	4,640.15	9.01	17.088	7.662	29.00	24.00
35.7	86.65	244.02	592.08	4,276.84	8.93	17.527	7.223	25.48	21.00
30.6	74.59	214.96	577.82	3,877.73	8.80	18.039	6.711	21.94	18.00
25.5	62.42	184.25	562.52	3,435.09	8.60	18.643	6.107	18.36	15.00
20.4	50.15	151.74	545.61	2,938.44	8.28	19.364	5.386	14.75	12.00
17.85	44.02	134.90	536.27	2,667.78	8.06	19.775	4.975	12.95	10.51
21 x 20 x 40.8	136.00	475.39	607.59	5,800.91	9.23	12.203	9.547	40.00	21.00
35.7	119.37	425.82	594.77	5,397.40	9.24	12.675	9.075	35.11	18.37
30.6	102.64	373.77	581.44	4,948.48	9.21	13.239	8.511	30.19	15.75
25.5	85.80	319.10	567.36	4,442.07	9.12	13.921	7.829	25.23	13.12
20.4	68.85	261.63	552.13	3,860.96	8.93	14.757	6.993	20.25	10.50
17.85	60.40	232.04	543.88	3,537.63	8.78	15.246	6.504	17.77	9.20
21 x 18 x 40.8	129.20	439.50	600.27	5,518.56	9.14	12.556	9.194	38.00	21.00
35.7	113.42	393.73	587.61	5,127.75	9.13	13.024	8.726	33.36	18.37
30.6	97.54	345.66	574.42	4,693.63	9.09	13.579	8.171	28.69	15.75



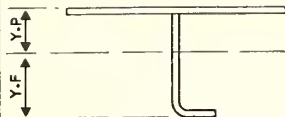
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	295.15	560.45	4,204.99	8.98	14.247	7.503	23.98	13.12
20.4	65.45	242.05	545.27	3,646.04	8.77	15.063	6.687	19.25	10.50
17.85	57.43	214.70	537.02	3,335.97	8.61	15.538	6.212	16.89	9.20
21 x 16 x 40.8	122.40	403.53	591.85	5,218.61	9.02	12.933	8.817	36.00	21.00
35.7	107.47	361.57	579.38	4,842.30	9.00	13.392	8.358	31.61	18.37
30.6	92.44	317.50	566.36	4,424.95	8.94	13.937	7.813	27.19	15.75
25.5	77.30	271.17	552.52	3,956.27	8.82	14.590	7.160	22.73	13.12
20.4	62.05	222.45	537.41	3,421.85	8.59	15.383	6.367	18.25	10.50
17.85	54.45	197.34	529.17	3,126.30	8.42	15.842	5.908	16.01	9.20
21 x 14 x 40.8	115.60	367.47	582.06	4,899.35	8.88	13.333	8.417	34.00	21.00
35.7	101.52	329.36	569.83	4,539.62	8.85	13.783	7.967	29.86	18.37
30.6	87.34	289.30	557.00	4,141.30	8.77	14.315	7.435	25.69	15.75
25.5	73.05	247.17	543.33	3,695.02	8.63	14.949	6.801	21.48	13.12
20.4	58.65	202.83	528.33	3,187.78	8.38	15.716	6.034	17.25	10.50
17.85	51.47	179.98	520.09	2,908.15	8.20	16.158	5.592	15.14	9.20
21 x 12 x 40.8	108.80	331.32	570.54	4,558.87	8.71	13.760	7.990	32.00	21.00
35.7	95.57	297.08	558.59	4,218.11	8.66	14.199	7.551	28.11	18.37
30.6	82.24	261.06	546.02	3,841.38	8.57	14.715	7.035	24.19	15.75
25.5	68.80	223.14	532.56	3,420.26	8.41	15.328	6.422	20.23	13.12
20.4	55.25	183.21	517.69	2,943.17	8.14	16.065	5.685	16.25	10.50
17.85	48.49	162.60	509.48	2,680.97	7.95	16.488	5.262	14.26	9.20
21 x 10 x 40.8	102.00	295.09	556.79	4,194.97	8.50	14.216	7.534	30.00	21.00
35.7	89.62	264.74	545.19	3,875.96	8.43	14.641	7.109	26.36	18.37
30.6	77.14	232.78	532.94	3,523.77	8.33	15.138	6.612	22.69	15.75
25.5	64.55	199.09	519.75	3,130.92	8.15	15.726	6.024	18.98	13.12
20.4	51.85	163.56	505.07	2,687.27	7.87	16.429	5.321	15.25	10.50
17.85	45.51	145.22	496.90	2,444.21	7.67	16.831	4.919	13.39	9.20
21 x 8 x 40.8	95.20	258.77	540.09	3,805.15	8.23	14.705	7.045	28.00	21.00
35.7	83.67	232.34	528.94	3,511.11	8.16	15.112	6.638	24.61	18.37
30.6	72.04	204.45	517.10	3,186.83	8.04	15.587	6.163	21.19	15.75
25.5	60.30	175.01	504.27	2,825.81	7.85	16.146	5.604	17.73	13.12
20.4	48.45	143.91	489.86	2,419.30	7.56	16.811	4.939	14.25	10.50
17.85	42.53	127.83	481.77	2,197.25	7.35	17.189	4.561	12.51	9.20
21 x 6 x 40.8	88.40	222.37	519.37	3,386.53	7.91	15.230	6.520	26.00	21.00
35.7	77.72	199.88	508.81	3,121.22	7.82	15.616	6.134	22.86	18.37
30.6	66.94	176.09	497.53	2,828.76	7.69	16.064	5.686	19.69	15.75
25.5	56.05	150.91	485.18	2,503.61	7.49	16.590	5.160	16.48	13.12
20.4	45.05	124.24	471.16	2,138.38	7.19	17.211	4.539	13.25	10.50
17.85	39.56	110.42	463.21	1,939.40	6.98	17.563	4.187	11.63	9.20
18 x 18 x 40.8	119.00	363.76	503.98	3,961.33	7.92	10.890	7.860	35.00	18.00
35.7	104.50	326.06	494.70	3,684.90	7.91	11.301	7.449	30.73	15.75
30.6	89.89	286.36	484.89	3,375.65	7.87	11.788	6.962	26.44	13.50
25.5	75.17	244.55	474.31	3,025.41	7.76	12.371	6.379	22.11	11.25
20.4	60.35	200.53	462.49	2,622.79	7.56	13.079	5.671	17.75	9.00
15.3	45.42	154.20	448.41	2,151.42	7.20	13.952	4.798	13.36	6.75
18 x 16 x 40.8	112.20	332.88	497.09	3,738.20	7.82	11.230	7.520	33.00	18.00
35.7	98.55	298.42	487.92	3,471.92	7.80	11.634	7.116	28.98	15.75
30.6	84.79	262.13	478.18	3,174.66	7.73	12.111	6.639	24.94	13.50
25.5	70.92	223.91	467.64	2,838.96	7.61	12.679	6.071	20.86	11.25
20.4	56.95	183.65	455.80	2,454.51	7.40	13.365	5.385	16.75	9.00
15.3	42.87	141.26	441.57	2,006.70	7.02	14.205	4.545	12.61	6.75
18 x 14 x 40.8	105.40	301.91	489.01	3,499.99	7.69	11.593	7.157	31.00	18.00
35.7	92.60	270.73	479.97	3,245.49	7.66	11.988	6.762	27.23	15.75
30.6	79.69	237.86	470.33	2,961.98	7.58	12.452	6.298	23.44	13.50
25.5	66.67	203.24	459.85	2,642.75	7.44	13.003	5.747	19.61	11.25
20.4	53.55	166.76	447.99	2,278.57	7.21	13.664	5.086	15.75	9.00
15.3	40.32	128.32	433.61	1,856.55	6.81	14.468	4.282	11.86	6.75



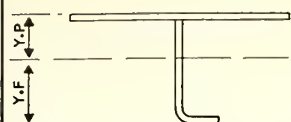
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	270.85	479.42	3,245.11	7.54	11.981	6.769	29.00	18.00
35.7	86.65	242.96	470.53	3,004.27	7.49	12.365	6.385	25.48	15.75
30.6	74.59	213.56	461.03	2,736.56	7.39	12.814	5.936	21.94	13.50
25.5	62.42	182.55	450.63	2,435.98	7.24	13.344	5.406	18.36	11.25
20.4	50.15	149.85	438.78	2,094.42	6.99	13.977	4.773	14.75	9.00
15.3	37.77	115.37	424.25	1,700.65	6.58	14.741	4.009	11.11	6.75
18 x 10 x 40.8	91.80	239.70	467.82	2,971.74	7.34	12.398	6.352	27.00	18.00
35.7	80.70	215.14	459.15	2,746.79	7.28	12.768	5.982	23.73	15.75
30.6	69.49	189.21	449.83	2,497.22	7.17	13.198	5.552	20.44	13.50
25.5	58.17	161.83	439.55	2,217.79	7.00	13.704	5.046	17.11	11.25
20.4	46.75	132.93	427.73	1,901.48	6.74	14.304	4.446	13.75	9.00
15.3	35.22	102.41	413.08	1,538.69	6.32	15.025	3.725	10.36	6.75
18 x 8 x 40.8	85.00	208.46	453.53	2,677.81	7.10	12.846	5.904	25.00	18.00
35.7	74.75	187.25	445.15	2,471.33	7.02	13.198	5.552	21.98	15.75
30.6	64.39	164.81	436.07	2,242.63	6.90	13.607	5.143	18.94	13.50
25.5	53.92	141.09	425.98	1,987.20	6.72	14.085	4.665	15.86	11.25
20.4	43.35	115.99	414.24	1,699.10	6.45	14.648	4.102	12.75	9.00
15.3	32.67	89.44	399.50	1,370.28	6.03	15.320	3.430	9.61	6.75
18 x 6 x 40.8	78.20	177.13	435.47	2,360.89	6.80	13.329	5.421	23.00	18.00
35.7	68.80	159.29	427.50	2,175.94	6.71	13.660	5.090	20.23	15.75
30.6	59.29	140.38	418.78	1,971.27	6.58	14.043	4.707	17.44	13.50
25.5	49.67	120.32	408.97	1,743.12	6.39	14.488	4.262	14.61	11.25
20.4	39.95	99.04	397.42	1,486.57	6.11	15.009	3.741	11.75	9.00
15.3	30.12	76.47	382.64	1,195.05	5.68	15.627	3.123	8.86	6.75

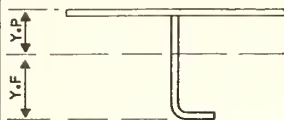


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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35.7# PLATE WEIGHT

NOMINAL SIZE IN. x IN. x LBS./FT. ²	WEIGHT PER FOOT LBS.	SECTION MODULUS		I IN. ⁴	r IN.	YF IN.	YP IN.	BEAM DIMENSIONS	
		LESSER IN. ³	GREATER IN. ³					AREA IN. ²	SHEAR AREA IN. ²
30 x 30 x 40.8	200.60	1,024.99	1,216.02	17,172.15	13.29	16.753	14.122	59.00	30.00
35.7	175.90	914.99	1,188.23	15,960.23	13.32	17.443	13.432	51.73	26.25
30.6	151.09	800.50	1,159.66	14,622.02	13.30	18.266	12.609	44.44	22.50
25.5	126.17	681.24	1,129.97	13,122.13	13.19	19.262	11.613	37.11	18.75
20.4	101.15	556.87	1,098.53	11,409.58	12.95	20.489	10.386	29.75	15.00
17.85	88.70	493.18	1,081.89	10,459.10	12.75	21.208	9.667	26.09	13.14
30 x 27 x 40.8	190.40	946.94	1,202.12	16,354.16	13.17	17.271	13.604	56.00	30.00
35.7	166.97	845.39	1,174.68	15,178.14	13.18	17.954	12.921	49.11	26.25
30.6	143.44	739.70	1,146.42	13,881.57	13.13	18.766	12.109	42.19	22.50
25.5	119.80	629.59	1,117.00	12,431.60	13.00	19.746	11.129	35.23	18.75
20.4	96.05	514.74	1,085.74	10,781.28	12.73	20.945	9.930	28.25	15.00
17.85	84.23	455.91	1,069.14	9,868.17	12.51	21.645	9.230	24.77	13.14
30 x 24 x 40.8	180.20	868.74	1,186.10	15,482.42	13.02	17.822	13.053	53.00	30.00
35.7	158.05	775.70	1,159.06	14,347.61	13.01	18.496	12.379	46.48	26.25
30.6	135.79	678.84	1,131.17	13,098.53	12.94	19.295	11.580	39.94	22.50
25.5	113.42	577.90	1,102.07	11,704.93	12.78	20.254	10.621	33.36	18.75
20.4	90.95	472.59	1,071.03	10,124.01	12.48	21.422	9.453	26.75	15.00
17.85	79.76	418.63	1,054.49	9,252.09	12.24	22.101	8.774	23.46	13.14
30 x 21 x 40.8	170.00	790.39	1,167.42	14,551.45	12.84	18.410	12.465	50.00	30.00
35.7	149.12	705.90	1,140.87	13,464.01	12.80	19.073	11.802	43.86	26.25
30.6	128.14	617.91	1,113.43	12,269.10	12.71	19.856	11.019	37.69	22.50
25.5	107.05	526.17	1,084.71	10,939.20	12.52	20.790	10.085	31.48	18.75
20.4	85.85	430.41	1,053.95	9,435.69	12.19	21.922	8.953	25.25	15.00
17.85	75.30	381.33	1,037.48	8,609.22	11.94	22.577	8.298	22.15	13.14
30 x 18 x 40.8	159.80	711.90	1,145.38	13,555.00	12.61	19.040	11.835	47.00	30.00
35.7	140.20	636.00	1,119.42	12,522.09	12.55	19.689	11.186	41.23	26.25
30.6	120.49	556.91	1,092.52	11,389.06	12.43	20.450	10.425	35.44	22.50
25.5	100.67	474.40	1,064.27	10,131.17	12.22	21.356	9.519	29.61	18.75
20.4	80.75	388.22	1,033.87	8,714.09	11.85	22.446	8.429	23.75	15.00
17.85	70.83	344.02	1,017.51	7,937.77	11.59	23.074	7.801	20.83	13.14
30 x 15 x 40.8	149.60	633.27	1,118.96	12,485.90	12.32	19.716	11.159	44.00	30.00
35.7	131.27	566.00	1,093.72	11,515.85	12.24	20.346	10.529	38.61	26.25
30.6	112.84	495.84	1,067.50	10,453.61	12.09	21.082	9.793	33.19	22.50
25.5	94.30	422.59	1,039.86	9,277.25	11.85	21.953	8.922	27.73	18.75
20.4	75.65	346.00	1,009.92	7,956.72	11.47	22.996	7.879	22.25	15.00
17.85	66.36	306.69	993.71	7,235.78	11.19	23.593	7.282	19.52	13.14
30 x 12 x 40.8	139.40	554.50	1,086.72	11,335.91	11.96	20.444	10.431	41.00	30.00
35.7	122.35	495.90	1,062.41	10,438.50	11.86	21.050	9.825	35.98	26.25
30.6	105.19	434.71	1,037.05	9,457.35	11.69	21.756	9.119	30.94	22.50
25.5	87.92	370.74	1,010.18	8,373.41	11.43	22.586	8.289	25.86	18.75
20.4	70.55	303.76	980.87	7,160.87	11.01	23.574	7.301	20.75	15.00
17.85	61.89	269.34	964.87	6,501.14	10.73	24.137	6.738	18.20	13.14
30 x 9 x 40.8	129.20	475.57	1,046.49	10,095.48	11.50	21.228	9.647	38.00	30.00
35.7	113.42	425.69	1,023.39	9,282.21	11.38	21.805	9.070	33.36	26.25
30.6	97.54	373.51	999.17	8,394.15	11.20	22.474	8.401	28.69	22.50
25.5	81.55	318.84	973.33	7,415.14	10.91	23.257	7.618	23.98	18.75
20.4	65.45	261.49	944.88	6,323.51	10.48	24.183	6.692	19.25	15.00
17.85	57.43	231.98	929.21	5,731.50	10.19	24.707	6.168	16.89	13.14
30 x 6 x 40.8	119.00	396.51	994.90	8,753.51	10.93	22.077	8.798	35.00	30.00
35.7	104.50	355.38	973.43	8,037.97	10.79	22.618	8.257	30.73	26.25
30.6	89.89	312.23	950.77	7,257.03	10.59	23.242	7.633	26.44	22.50
25.5	75.17	266.90	926.36	6,397.36	10.29	23.969	6.906	22.11	18.75
20.4	60.35	219.20	899.14	5,441.33	9.85	24.823	6.052	17.75	15.00
17.85	52.96	194.60	883.96	4,924.31	9.56	25.304	5.571	15.58	13.14
27 x 27 x 40.8	180.20	834.36	1,067.10	13,052.28	11.96	15.643	12.232	53.00	27.00
35.7	158.05	744.93	1,044.77	12,121.87	11.96	16.273	11.602	46.48	23.62
30.6	135.79	651.75	1,021.62	11,091.55	11.91	17.018	10.857	39.94	20.25



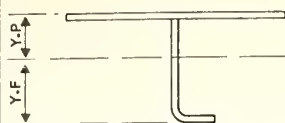
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	554.60	997.31	9,934.80	11.78	17.913	9.962	33.36	16.87
20.4	90.95	453.25	971.13	8,614.04	11.51	19.005	8.870	26.75	13.50
17.85	79.76	401.35	957.03	7,882.06	11.30	19.639	8.236	23.46	11.83
27 x 24 x 40.8	170.00	763.75	1,053.23	12,340.68	11.82	16.158	11.717	50.00	27.00
35.7	149.12	681.97	1,031.18	11,442.45	11.80	16.779	11.096	43.86	23.62
30.6	128.14	596.75	1,008.28	10,449.75	11.73	17.511	10.364	37.69	20.25
25.5	107.05	507.89	984.16	9,338.27	11.57	18.386	9.489	31.48	16.87
20.4	85.85	415.16	958.07	8,073.94	11.27	19.448	8.427	25.25	13.50
17.85	75.30	367.66	943.95	7,375.71	11.05	20.061	7.814	22.15	11.83
27 x 21 x 40.8	159.80	692.99	1,036.98	11,579.03	11.65	16.709	11.166	47.00	27.00
35.7	140.20	618.90	1,015.27	10,718.19	11.61	17.318	10.557	41.23	23.62
30.6	120.49	541.68	992.67	9,768.78	11.51	18.034	9.841	35.44	20.25
25.5	100.67	461.13	968.78	8,708.79	11.33	18.886	8.989	29.61	16.87
20.4	80.75	377.05	942.81	7,507.71	11.00	19.912	7.963	23.75	13.50
17.85	70.83	333.95	928.69	6,846.84	10.76	20.502	7.373	20.83	11.83
27 x 18 x 40.8	149.60	622.08	1,017.66	10,761.86	11.44	17.300	10.575	44.00	27.00
35.7	131.27	555.73	996.38	9,944.49	11.37	17.894	9.981	38.61	23.62
30.6	112.84	486.55	974.15	9,044.93	11.25	18.590	9.285	33.19	20.25
25.5	94.30	414.34	950.56	8,043.56	11.04	19.413	8.462	27.73	16.87
20.4	75.65	338.91	924.77	6,913.42	10.69	20.399	7.476	22.25	13.50
17.85	66.36	300.23	910.65	6,293.93	10.44	20.964	6.911	19.52	11.83
27 x 15 x 40.8	139.40	551.02	994.31	9,882.87	11.17	17.936	9.939	41.00	27.00
35.7	122.35	492.46	973.57	9,116.10	11.08	18.511	9.364	35.98	23.62
30.6	105.19	431.34	951.82	8,274.03	10.93	19.182	8.693	30.94	20.25
25.5	87.92	367.50	928.63	7,339.44	10.70	19.971	7.904	25.86	16.87
20.4	70.55	300.75	903.08	6,288.93	10.32	20.911	6.964	20.75	13.50
17.85	61.89	266.50	889.00	5,715.29	10.06	21.446	6.429	18.20	11.83
27 x 12 x 40.8	129.20	479.81	965.53	8,934.75	10.82	18.621	9.254	38.00	27.00
35.7	113.42	429.08	945.49	8,227.02	10.72	19.174	8.701	33.36	23.62
30.6	97.54	376.06	924.38	7,451.34	10.55	19.814	8.061	28.69	20.25
25.5	81.55	320.61	901.72	6,592.92	10.29	20.563	7.312	23.98	16.87
20.4	65.45	262.56	876.54	5,631.88	9.89	21.450	6.425	19.25	13.50
17.85	57.43	232.74	862.54	5,109.09	9.62	21.952	5.923	16.89	11.83
27 x 9 x 40.8	119.00	408.46	929.18	7,909.03	10.39	19.363	8.512	35.00	27.00
35.7	104.50	365.59	910.07	7,270.31	10.26	19.886	7.989	30.73	23.62
30.6	89.89	320.72	889.83	6,571.45	10.08	20.490	7.385	26.44	20.25
25.5	75.17	273.69	867.91	5,800.04	9.80	21.192	6.683	22.11	16.87
20.4	60.35	224.35	843.29	4,939.65	9.39	22.017	5.858	17.75	13.50
17.85	52.96	198.97	829.46	4,473.32	9.11	22.482	5.393	15.58	11.83
27 x 6 x 40.8	108.80	336.95	881.81	6,795.75	9.83	20.168	7.707	32.00	27.00
35.7	95.57	302.00	864.02	6,237.96	9.69	20.655	7.220	28.11	23.62
30.6	82.24	265.30	845.00	5,628.18	9.49	21.214	6.661	24.19	20.25
25.5	68.80	226.72	824.18	4,956.35	9.20	21.861	6.014	20.23	16.87
20.4	55.25	186.12	800.44	4,209.34	8.79	22.616	5.259	16.25	13.50
17.85	48.49	165.19	786.91	3,805.74	8.51	23.039	4.836	14.26	11.83
24 x 24 x 40.8	159.80	662.24	922.92	9,591.13	10.61	14.483	10.392	47.00	24.00
35.7	140.20	591.41	905.38	8,898.62	10.58	15.046	9.829	41.23	21.00
30.6	120.49	517.51	886.99	8,129.80	10.50	15.709	9.166	35.44	18.00
25.5	100.67	440.39	867.37	7,265.64	10.35	16.498	8.377	29.61	15.00
20.4	80.75	359.87	845.75	6,279.73	10.06	17.450	7.425	23.75	12.00
17.85	70.83	318.62	833.83	5,734.48	9.85	17.998	6.877	20.83	10.51
24 x 22 x 40.8	153.00	620.20	913.90	9,190.54	10.51	14.819	10.056	45.00	24.00
35.7	134.25	553.92	896.50	8,516.62	10.47	15.375	9.500	39.48	21.00
30.6	115.39	484.76	878.22	7,769.68	10.37	16.028	8.847	33.94	18.00
25.5	96.42	412.57	858.66	6,931.98	10.20	16.802	8.073	28.36	15.00
20.4	77.35	337.19	837.02	5,979.02	9.90	17.732	7.143	22.75	12.00
17.85	67.85	298.57	825.04	5,453.41	9.68	18.265	6.610	19.96	10.51



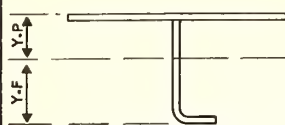
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	578.10	903.77	8,770.24	10.39	15.171	9.704	43.00	24.00
35.7	128.30	516.38	886.53	8,117.03	10.33	15.719	9.156	37.73	21.00
30.6	110.29	451.98	868.38	7,394.30	10.23	16.360	8.515	32.44	18.00
25.5	92.17	384.73	848.89	6,585.56	10.04	17.117	7.758	27.11	15.00
20.4	73.95	314.50	827.25	5,668.30	9.72	18.023	6.852	21.75	12.00
17.85	64.87	278.51	815.21	5,163.76	9.49	18.541	6.334	19.08	10.51
24 x 18 x 40.8	139.40	535.92	892.30	8,328.74	10.25	15.541	9.334	41.00	24.00
35.7	122.35	478.80	875.25	7,698.62	10.18	16.079	8.796	35.98	21.00
30.6	105.19	419.16	857.26	7,002.64	10.06	16.706	8.169	30.94	18.00
25.5	87.92	356.88	837.87	6,225.64	9.85	17.445	7.430	25.86	15.00
20.4	70.55	291.80	816.23	5,347.04	9.52	18.324	6.551	20.75	12.00
17.85	61.89	258.44	804.14	4,865.13	9.28	18.825	6.050	18.20	10.51
24 x 16 x 40.8	132.60	493.68	879.22	7,864.40	10.09	15.930	8.945	39.00	24.00
35.7	116.40	441.16	862.40	7,260.02	10.01	16.457	8.418	34.23	21.00
30.6	100.09	386.31	844.59	6,593.64	9.87	17.068	7.807	29.44	18.00
25.5	83.67	329.00	825.33	5,851.42	9.65	17.785	7.090	24.61	15.00
20.4	67.15	269.09	803.71	5,014.72	9.30	18.636	6.239	19.75	12.00
17.85	58.92	238.37	791.57	4,557.08	9.05	19.118	5.757	17.33	10.51
24 x 14 x 40.8	125.80	451.36	864.16	7,375.39	9.90	16.340	8.535	37.00	24.00
35.7	110.45	403.48	847.61	6,799.73	9.80	16.853	8.022	32.48	21.00
30.6	94.99	353.43	830.03	6,166.11	9.65	17.446	7.429	27.94	18.00
25.5	79.42	301.11	810.94	5,462.02	9.41	18.140	6.735	23.36	15.00
20.4	63.75	246.37	789.37	4,670.74	9.05	18.958	5.917	18.75	12.00
17.85	55.94	218.28	777.18	4,239.18	8.80	19.420	5.455	16.45	10.51
24 x 12 x 40.8	119.00	408.98	846.62	6,859.70	9.68	16.773	8.102	35.00	24.00
35.7	104.50	365.75	830.41	6,316.11	9.57	17.269	7.606	30.73	21.00
30.6	89.89	320.52	813.12	5,718.77	9.40	17.842	7.033	26.44	18.00
25.5	75.17	273.20	794.24	5,056.50	9.15	18.509	6.366	22.11	15.00
20.4	60.35	223.64	772.77	4,314.49	8.78	19.292	5.583	17.75	12.00
17.85	52.96	198.19	760.55	3,910.94	8.52	19.733	5.142	15.58	10.51
24 x 10 x 40.8	112.20	366.54	825.95	6,315.09	9.41	17.229	7.646	33.00	24.00
35.7	98.55	327.97	810.16	5,807.32	9.29	17.707	7.168	28.98	21.00
30.6	84.79	287.58	793.25	5,250.20	9.11	18.256	6.619	24.94	18.00
25.5	70.92	245.27	774.65	4,633.85	8.85	18.893	5.982	20.86	15.00
20.4	56.95	200.90	753.33	3,945.29	8.47	19.638	5.237	16.75	12.00
17.85	49.98	178.10	741.11	3,571.84	8.21	20.055	4.820	14.70	10.51
24 x 8 x 40.8	105.40	324.02	801.21	5,739.03	9.10	17.712	7.163	31.00	24.00
35.7	92.60	290.14	785.97	5,271.36	8.97	18.168	6.707	27.23	21.00
30.6	79.69	254.61	769.54	4,758.86	8.78	18.691	6.184	23.44	18.00
25.5	66.67	217.31	751.34	4,192.94	8.51	19.294	5.581	19.61	15.00
20.4	53.55	178.15	730.26	3,562.42	8.12	19.997	4.878	15.75	12.00
17.85	47.00	157.99	718.07	3,221.34	7.86	20.389	4.486	13.82	10.51
24 x 6 x 40.8	98.60	281.43	771.09	5,128.74	8.73	18.224	6.651	29.00	24.00
35.7	86.65	252.27	756.57	4,705.99	8.59	18.655	6.220	25.48	21.00
30.6	74.59	221.60	740.78	4,243.04	8.39	19.147	5.728	21.94	18.00
25.5	62.42	189.34	723.12	3,732.57	8.12	19.713	5.162	18.36	15.00
20.4	50.15	155.39	702.43	3,165.12	7.73	20.369	4.506	14.75	12.00
17.85	44.02	137.88	690.35	2,858.85	7.47	20.734	4.141	12.95	10.51
21 x 20 x 40.8	136.00	490.49	778.97	6,583.85	9.17	13.423	8.452	40.00	21.00
35.7	119.37	438.24	765.60	6,096.70	9.11	13.912	7.963	35.11	18.37
30.6	102.64	383.63	751.31	5,555.30	9.01	14.481	7.394	30.19	15.75
25.5	85.80	326.55	735.67	4,947.28	8.83	15.150	6.725	25.23	13.12
20.4	68.85	266.89	717.83	4,255.90	8.53	15.946	5.929	20.25	10.50
17.85	60.40	236.31	707.65	3,875.21	8.32	16.399	5.476	17.77	9.20
21 x 18 x 40.8	129.20	453.49	769.23	6,240.92	9.05	13.762	8.113	38.00	21.00
35.7	113.42	405.25	755.96	5,771.11	8.98	14.241	7.634	33.36	18.37
30.6	97.54	354.81	741.73	5,250.08	8.85	14.797	7.078	28.69	15.75



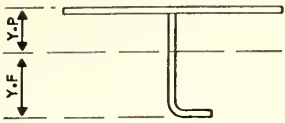
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

50t

STEEL

35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	302.08	726.09	4,666.51	8.66	15.448	6.427	23.98	13.12
20.4	65.45	246.95	708.14	4,005.22	8.34	16.219	5.656	19.25	10.50
17.85	57.43	218.68	697.85	3,642.23	8.13	16.656	5.219	16.89	9.20
21 x 16 x 40.8	122.40	416.43	758.05	5,879.53	8.90	14.119	7.756	36.00	21.00
35.7	107.47	372.21	744.90	5,429.21	8.81	14.586	7.289	31.61	18.37
30.6	92.44	325.96	730.75	4,930.88	8.68	15.127	6.748	27.19	15.75
25.5	77.30	277.59	715.11	4,374.25	8.47	15.758	6.117	22.73	13.12
20.4	62.05	226.99	697.07	3,745.68	8.14	16.502	5.373	18.25	10.50
17.85	54.45	201.04	686.66	3,401.73	7.92	16.921	4.954	16.01	9.20
21 x 14 x 40.8	115.60	379.29	745.08	5,498.15	8.72	14.496	7.379	34.00	21.00
35.7	101.52	339.12	732.08	5,069.77	8.63	14.950	6.925	29.86	18.37
30.6	87.34	297.08	718.03	4,596.71	8.48	15.473	6.402	25.69	15.75
25.5	73.05	253.08	702.43	4,069.76	8.25	16.081	5.794	21.48	13.12
20.4	58.65	207.02	684.30	3,476.79	7.91	16.794	5.081	17.25	10.50
17.85	51.47	183.39	673.77	3,153.34	7.68	17.195	4.680	15.14	9.20
21 x 12 x 40.8	108.80	342.09	729.85	5,095.07	8.51	14.894	6.981	32.00	21.00
35.7	95.57	305.98	717.05	4,691.38	8.41	15.332	6.543	28.11	18.37
30.6	82.24	268.16	703.15	4,246.49	8.24	15.836	6.039	24.19	15.75
25.5	68.80	228.55	687.61	3,752.27	8.01	16.418	5.457	20.23	13.12
20.4	55.25	187.05	669.41	3,198.04	7.66	17.098	4.777	16.25	10.50
17.85	48.49	165.73	658.77	2,896.68	7.42	17.478	4.397	14.26	9.20
21 x 10 x 40.8	102.00	304.81	711.72	4,668.39	8.27	15.316	6.559	30.00	21.00
35.7	89.62	272.79	699.18	4,292.50	8.15	15.736	6.139	26.36	18.37
30.6	77.14	239.21	685.48	3,879.05	7.98	16.216	5.659	22.69	15.75
25.5	64.55	203.99	670.06	3,420.91	7.73	16.770	5.105	18.98	13.12
20.4	51.85	167.06	651.82	2,908.88	7.37	17.412	4.463	15.25	10.50
17.85	45.51	148.07	641.08	2,631.30	7.14	17.771	4.104	13.39	9.20
21 x 8 x 40.8	95.20	267.46	689.75	4,215.97	7.98	15.763	6.112	28.00	21.00
35.7	83.67	239.55	677.57	3,871.44	7.85	16.161	5.714	24.61	18.37
30.6	72.04	210.23	664.17	3,493.07	7.66	16.616	5.259	21.19	15.75
25.5	60.30	179.42	648.94	3,074.77	7.41	17.137	4.738	17.73	13.12
20.4	48.45	147.06	630.73	2,608.70	7.05	17.739	4.136	14.25	10.50
17.85	42.53	130.40	619.92	2,356.78	6.81	18.073	3.802	12.51	9.20
21 x 6 x 40.8	88.40	230.05	662.61	3,735.41	7.62	16.238	5.637	26.00	21.00
35.7	77.72	206.26	650.94	3,426.27	7.49	16.611	5.264	22.86	18.37
30.6	66.94	181.21	637.96	3,087.12	7.30	17.036	4.839	19.69	15.75
25.5	56.05	154.83	623.05	2,712.83	7.04	17.521	4.354	16.48	13.12
20.4	45.05	127.05	604.99	2,296.88	6.68	18.078	3.797	13.25	10.50
17.85	39.56	112.72	594.14	2,072.62	6.44	18.387	3.488	11.63	9.20
18 x 18 x 40.8	119.00	374.88	648.35	4,483.49	7.82	11.960	6.915	35.00	18.00
35.7	104.50	335.17	638.38	4,148.32	7.75	12.377	6.498	30.73	15.75
30.6	89.89	293.56	627.45	3,774.85	7.64	12.859	6.016	26.44	13.50
25.5	75.17	249.99	615.09	3,354.95	7.45	13.421	5.454	22.11	11.25
20.4	60.35	204.37	600.39	2,877.91	7.17	14.082	4.793	17.75	9.00
15.3	45.42	156.65	581.30	2,329.17	6.72	14.868	4.007	13.36	6.75
18 x 16 x 40.8	112.20	343.07	638.99	4,213.30	7.69	12.281	6.594	33.00	18.00
35.7	98.55	306.78	629.04	3,892.26	7.61	12.687	6.188	28.98	15.75
30.6	84.79	268.75	618.09	3,535.46	7.48	13.155	5.720	24.94	13.50
25.5	70.92	228.91	605.64	3,135.59	7.28	13.698	5.177	20.86	11.25
20.4	56.95	187.20	590.72	2,683.10	6.98	14.333	4.542	16.75	9.00
15.3	42.87	143.53	571.21	2,165.14	6.52	15.085	3.790	12.61	6.75
18 x 14 x 40.8	105.40	311.18	628.04	3,927.52	7.53	12.621	6.254	31.00	18.00
35.7	92.60	278.34	618.14	3,622.53	7.44	13.015	5.860	27.23	15.75
30.6	79.69	243.91	607.18	3,284.44	7.30	13.466	5.409	23.44	13.50
25.5	66.67	207.82	594.64	2,906.77	7.09	13.987	4.888	19.61	11.25
20.4	53.55	170.01	579.50	2,481.08	6.78	14.594	4.281	15.75	9.00
15.3	40.32	130.41	559.53	1,996.20	6.31	15.307	3.568	11.86	6.75



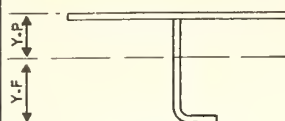
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

35.7 # PLATE WEIGHT

NOMINAL SIZE IN. x IN. x LBS./FT. ²	WEIGHT PER FOOT LBS.	SECTION MODULUS		I IN. ⁴	r IN.	YF IN.	YP IN.	BEAM DIMENSIONS	
		LESSER IN. ³	GREATER IN. ³					AREA IN. ²	SHEAR AREA IN. ²
18 x 12 x 40.8	98.60	279.22	615.07	3,624.76	7.34	12.982	5.893	29.00	18.00
35.7	86.65	249.85	605.24	3,338.00	7.24	13.360	5.515	25.48	15.75
30.6	74.59	219.04	594.29	3,020.92	7.08	13.792	5.083	21.94	13.50
25.5	62.42	186.71	581.67	2,667.84	6.86	14.288	4.587	18.36	11.25
20.4	50.15	152.81	566.31	2,271.44	6.54	14.864	4.011	14.75	9.00
15.3	37.77	117.28	545.87	1,822.13	6.07	15.537	3.338	11.11	6.75
18 x 10 x 40.8	91.80	247.19	599.45	3,303.46	7.11	13.364	5.511	27.00	18.00
35.7	80.70	221.31	589.73	3,037.42	7.00	13.724	5.151	23.73	15.75
30.6	69.49	194.13	578.83	2,743.94	6.84	14.134	4.741	20.44	13.50
25.5	58.17	165.58	566.16	2,418.13	6.61	14.604	4.271	17.11	11.25
20.4	46.75	135.61	550.59	2,053.74	6.28	15.145	3.730	13.75	9.00
15.3	35.22	104.14	529.67	1,642.69	5.81	15.774	3.101	10.36	6.75
18 x 8 x 40.8	85.00	215.08	580.27	2,961.86	6.84	13.771	5.104	25.00	18.00
35.7	74.75	192.72	570.74	2,719.38	6.72	14.110	4.765	21.98	15.75
30.6	64.39	169.19	559.94	2,452.44	6.55	14.495	4.380	18.94	13.50
25.5	53.92	144.43	547.27	2,156.89	6.31	14.934	3.941	15.86	11.25
20.4	43.35	118.39	531.53	1,827.51	5.98	15.437	3.438	12.75	9.00
15.3	32.67	91.00	510.15	1,457.63	5.52	16.018	2.857	9.61	6.75
18 x 6 x 40.8	78.20	182.91	556.18	2,597.97	6.51	14.204	4.671	23.00	18.00
35.7	68.80	164.08	546.94	2,382.33	6.38	14.519	4.356	20.23	15.75
30.6	59.29	144.21	536.36	2,145.24	6.21	14.875	4.000	17.44	13.50
25.5	49.67	123.26	523.78	1,883.30	5.97	15.279	3.596	14.61	11.25
20.4	39.95	101.16	507.95	1,592.24	5.64	15.740	3.135	11.75	9.00
15.3	30.12	77.86	486.18	1,266.69	5.18	16.270	2.605	8.86	6.75



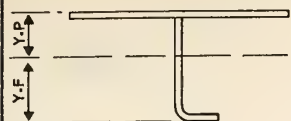
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,052.35	1,506.99	19,208.96	13.28	18.253	12.747	59.00	30.00
35.7	175.90	937.49	1,478.48	17,784.91	13.22	18.971	12.029	51.73	26.25
30.6	151.09	818.35	1,448.69	16,211.23	13.10	19.810	11.190	44.44	22.50
25.5	126.17	694.71	1,417.01	14,451.13	12.88	20.802	10.198	37.11	18.75
20.4	101.15	566.35	1,382.24	12,453.96	12.50	21.990	9.010	29.75	15.00
17.85	88.70	500.85	1,363.13	11,354.34	12.22	22.670	8.330	26.09	13.14
30 x 27 x 40.8	190.40	972.30	1,489.40	18,236.39	13.12	18.756	12.244	56.00	30.00
35.7	166.97	866.28	1,461.15	16,859.21	13.04	19.462	11.538	49.11	26.25
30.6	143.44	756.29	1,431.56	15,340.54	12.90	20.284	10.716	42.19	22.50
25.5	119.80	642.12	1,399.99	13,646.62	12.65	21.252	9.748	35.23	18.75
20.4	96.05	523.57	1,365.19	11,731.40	12.24	22.407	8.593	28.25	15.00
17.85	84.23	463.06	1,345.96	10,680.34	11.95	23.065	7.935	24.77	13.14
30 x 24 x 40.8	180.20	892.14	1,469.15	17,207.19	12.93	19.288	11.712	53.00	30.00
35.7	158.05	794.98	1,441.21	15,883.16	12.83	19.979	11.021	46.48	26.25
30.6	135.79	694.17	1,411.87	14,426.29	12.67	20.782	10.218	39.94	22.50
25.5	113.42	589.50	1,380.45	12,805.92	12.39	21.723	9.277	33.36	18.75
20.4	90.95	480.77	1,345.62	10,980.59	11.96	22.840	8.160	26.75	15.00
17.85	79.76	425.25	1,326.29	9,982.23	11.66	23.474	7.526	23.46	13.14
30 x 21 x 40.8	170.00	811.85	1,445.57	16,116.25	12.69	19.851	11.149	50.00	30.00
35.7	149.12	723.60	1,418.01	14,852.52	12.58	20.526	10.474	43.86	26.25
30.6	128.14	631.99	1,388.98	13,465.13	12.39	21.306	9.694	37.69	22.50
25.5	107.05	536.84	1,357.76	11,926.54	12.10	22.216	8.784	31.48	18.75
20.4	85.85	437.95	1,322.95	10,199.85	11.64	23.290	7.710	25.25	15.00
17.85	75.30	387.44	1,303.51	9,258.69	11.33	23.897	7.103	22.15	13.14
30 x 18 x 40.8	159.80	731.44	1,417.77	14,957.84	12.42	20.450	10.550	47.00	30.00
35.7	140.20	652.14	1,390.69	13,762.59	12.28	21.104	9.896	41.23	26.25
30.6	120.49	569.77	1,362.06	12,453.34	12.07	21.857	9.143	35.44	22.50
25.5	100.67	484.15	1,331.11	11,005.73	11.76	22.732	8.268	29.61	18.75
20.4	80.75	395.11	1,296.36	9,387.36	11.28	23.759	7.241	23.75	15.00
17.85	70.83	349.61	1,276.82	8,508.31	10.96	24.336	6.664	20.83	13.14
30 x 15 x 40.8	149.60	650.92	1,384.52	13,725.51	12.08	21.086	9.914	44.00	30.00
35.7	131.27	580.59	1,358.04	12,608.08	11.93	21.716	9.284	38.61	26.25
30.6	112.84	507.48	1,329.93	11,386.84	11.70	22.438	8.562	33.19	22.50
25.5	94.30	431.43	1,299.35	10,040.51	11.37	23.273	7.727	27.73	18.75
20.4	75.65	352.26	1,264.74	8,541.13	10.87	24.247	6.753	22.25	15.00
17.85	66.36	311.77	1,245.13	7,729.56	10.54	24.792	6.208	19.52	13.14
30 x 12 x 40.8	139.40	570.27	1,344.03	12,411.94	11.68	21.765	9.235	41.00	30.00
35.7	122.35	508.96	1,318.34	11,383.10	11.51	22.366	8.634	35.98	26.25
30.6	105.19	445.14	1,290.91	10,261.04	11.26	23.051	7.949	30.94	22.50
25.5	87.92	378.67	1,260.87	9,027.57	10.91	23.840	7.160	25.86	18.75
20.4	70.55	309.39	1,226.53	7,659.02	10.40	24.756	6.244	20.75	15.00
17.85	61.89	273.92	1,206.89	6,920.80	10.07	25.266	5.734	18.20	13.14
30 x 9 x 40.8	129.20	489.50	1,293.64	11,008.82	11.18	22.490	8.510	38.00	30.00
35.7	113.42	437.24	1,269.02	10,080.97	11.00	23.056	7.944	33.36	26.25
30.6	97.54	382.74	1,242.54	9,070.87	10.74	23.700	7.300	28.69	22.50
25.5	81.55	325.88	1,213.26	7,963.29	10.37	24.436	6.564	23.98	18.75
20.4	65.45	266.50	1,179.40	6,738.70	9.86	25.286	5.714	19.25	15.00
17.85	57.43	236.06	1,159.83	6,080.27	9.53	25.758	5.242	16.89	13.14
30 x 6 x 40.8	119.00	408.61	1,229.23	9,506.69	10.58	23.266	7.734	35.00	30.00
35.7	104.50	365.43	1,206.11	8,694.18	10.38	23.792	7.208	30.73	26.25
30.6	89.89	320.29	1,180.98	7,810.63	10.11	24.386	6.614	26.44	22.50
25.5	75.17	273.05	1,152.86	6,843.67	9.74	25.064	5.936	22.11	18.75
20.4	60.35	223.59	1,119.83	5,777.62	9.23	25.841	5.159	17.75	15.00
17.85	52.96	198.18	1,100.50	5,206.06	8.91	26.269	4.731	15.58	13.14
27 x 27 x 40.8	180.20	855.92	1,325.92	14,564.18	11.89	17.016	10.984	53.00	27.00
35.7	158.05	762.61	1,302.70	13,468.51	11.81	17.661	10.339	46.48	23.62
30.6	135.79	665.73	1,278.15	12,256.55	11.67	18.411	9.589	39.94	20.25



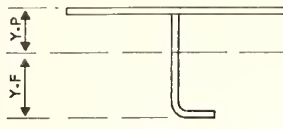
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	565.13	1,251.58	10,901.40	11.44	19.290	8.710	33.36	16.87
20.4	90.95	460.66	1,221.72	9,366.63	11.05	20.333	7.667	26.75	13.50
17.85	79.76	407.34	1,204.92	8,523.86	10.77	20.926	7.074	23.46	11.83
27 x 24 x 40.8	170.00	783.56	1,308.17	13,721.07	11.71	17.511	10.489	50.00	27.00
35.7	149.12	698.23	1,285.14	12,667.85	11.62	18.143	9.857	43.86	23.62
30.6	128.14	609.63	1,260.69	11,505.77	11.45	18.873	9.127	37.69	20.25
25.5	107.05	517.60	1,234.14	10,210.53	11.19	19.727	8.273	31.48	16.87
20.4	85.85	422.00	1,204.11	8,749.53	10.78	20.734	7.266	25.25	13.50
17.85	75.30	373.20	1,187.11	7,950.18	10.50	21.303	6.697	22.15	11.83
27 x 21 x 40.8	159.80	711.07	1,287.39	12,825.82	11.50	18.037	9.963	47.00	27.00
35.7	140.20	633.76	1,264.59	11,821.12	11.38	18.652	9.348	41.23	23.62
30.6	120.49	553.47	1,240.30	10,715.45	11.20	19.361	8.639	35.44	20.25
25.5	100.67	470.04	1,213.78	9,487.13	10.92	20.184	7.816	29.61	16.87
20.4	80.75	383.32	1,183.59	8,107.33	10.48	21.150	6.850	23.75	13.50
17.85	70.83	339.04	1,166.39	7,355.21	10.19	21.694	6.306	20.83	11.83
27 x 18 x 40.8	149.60	638.46	1,262.74	11,873.45	11.24	18.597	9.403	44.00	27.00
35.7	131.27	569.21	1,240.24	10,924.24	11.10	19.192	8.808	38.61	23.62
30.6	112.84	497.25	1,216.16	9,882.39	10.90	19.874	8.126	33.19	20.25
25.5	94.30	422.43	1,189.72	8,728.83	10.60	20.663	7.337	27.73	16.87
20.4	75.65	344.63	1,159.39	7,438.47	10.15	21.584	6.416	22.25	13.50
17.85	66.36	304.88	1,141.98	6,737.75	9.84	22.100	5.900	19.52	11.83
27 x 15 x 40.8	139.40	565.72	1,233.01	10,858.29	10.92	19.194	8.806	41.00	27.00
35.7	122.35	504.57	1,210.91	9,972.61	10.77	19.764	8.236	35.98	23.62
30.6	105.19	440.97	1,187.14	9,003.02	10.55	20.416	7.584	30.94	20.25
25.5	87.92	374.80	1,160.84	7,933.04	10.23	21.166	6.834	25.86	16.87
20.4	70.55	305.91	1,130.41	6,741.25	9.76	22.036	5.964	20.75	13.50
17.85	61.89	270.70	1,112.80	6,096.50	9.45	22.521	5.479	18.20	11.83
27 x 12 x 40.8	129.20	492.86	1,196.46	9,773.94	10.54	19.831	8.169	38.00	27.00
35.7	113.42	439.85	1,174.91	8,961.05	10.37	20.373	7.627	33.36	23.62
30.6	97.54	384.64	1,151.57	8,073.36	10.13	20.989	7.011	28.69	20.25
25.5	81.55	327.13	1,125.54	7,096.93	9.79	21.695	6.305	23.98	16.87
20.4	65.45	267.18	1,095.08	6,013.82	9.32	22.508	5.492	19.25	13.50
17.85	57.43	236.50	1,077.30	5,430.05	9.01	22.960	5.040	16.89	11.83
27 x 9 x 40.8	119.00	419.88	1,150.44	8,613.07	10.07	20.513	7.487	35.00	27.00
35.7	104.50	375.04	1,129.66	7,883.73	9.88	21.021	6.979	30.73	23.62
30.6	89.89	328.25	1,106.97	7,088.98	9.63	21.596	6.404	26.44	20.25
25.5	75.17	279.42	1,081.39	6,217.33	9.29	22.251	5.749	22.11	16.87
20.4	60.35	228.43	1,051.08	5,254.18	8.81	23.001	4.999	17.75	13.50
17.85	52.96	202.30	1,033.19	4,736.90	8.50	23.415	4.585	15.58	11.83
27 x 6 x 40.8	108.80	346.77	1,090.71	7,367.27	9.48	21.245	6.755	32.00	27.00
35.7	95.57	310.14	1,071.09	6,734.00	9.29	21.713	6.287	28.11	23.62
30.6	82.24	271.81	1,049.40	6,044.89	9.03	22.240	5.760	24.19	20.25
25.5	68.80	231.68	1,024.61	5,290.78	8.68	22.836	5.164	20.23	16.87
20.4	55.25	189.66	994.74	4,460.15	8.21	23.516	4.484	16.25	13.50
17.85	48.49	168.08	976.88	4,015.40	7.90	23.890	4.110	14.26	11.83
24 x 24 x 40.8	159.80	678.77	1,149.37	10,668.73	10.49	15.718	9.282	47.00	24.00
35.7	140.20	604.92	1,130.78	9,852.43	10.39	16.287	8.713	41.23	21.00
30.6	120.49	528.17	1,110.75	8,949.02	10.23	16.943	8.057	35.44	18.00
25.5	100.67	448.41	1,088.59	7,939.71	9.99	17.706	7.294	29.61	15.00
20.4	80.75	365.51	1,062.89	6,799.55	9.60	18.603	6.397	23.75	12.00
17.85	70.83	323.20	1,048.00	6,175.47	9.34	19.107	5.893	20.83	10.51
24 x 22 x 40.8	153.00	635.71	1,137.67	10,195.65	10.36	16.038	8.962	45.00	24.00
35.7	134.25	566.62	1,119.13	9,404.10	10.25	16.597	8.403	39.48	21.00
30.6	115.39	494.79	1,099.11	8,529.83	10.08	17.239	7.761	33.94	18.00
25.5	96.42	420.12	1,076.87	7,555.45	9.82	17.984	7.016	28.36	15.00
20.4	77.35	342.51	1,050.95	6,458.07	9.42	18.855	6.145	22.75	12.00
17.85	67.85	302.89	1,035.87	5,859.01	9.15	19.344	5.656	19.96	10.51



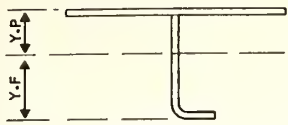
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

50t

STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	592.60	1,124.55	9,702.23	10.21	16.372	8.628	43.00	24.00
35.7	128.30	528.27	1,106.08	8,937.90	10.09	16.919	8.081	37.73	21.00
30.6	110.29	461.37	1,086.08	8,095.38	9.91	17.546	7.454	32.44	18.00
25.5	92.17	391.82	1,063.76	7,158.74	9.64	18.270	6.730	27.11	15.00
20.4	73.95	319.50	1,037.62	6,107.08	9.23	19.114	5.886	21.75	12.00
17.85	64.87	282.57	1,022.34	5,534.53	8.95	19.586	5.414	19.08	10.51
24 x 18 x 40.8	139.40	549.43	1,109.71	9,187.13	10.05	16.721	8.279	41.00	24.00
35.7	122.35	489.88	1,091.34	8,452.73	9.91	17.255	7.745	35.98	21.00
30.6	105.19	427.94	1,071.37	7,644.84	9.72	17.864	7.136	30.94	18.00
25.5	87.92	363.51	1,048.99	6,748.95	9.43	18.566	6.434	25.86	15.00
20.4	70.55	296.49	1,022.62	5,746.17	9.01	19.381	5.619	20.75	12.00
17.85	61.89	262.25	1,007.14	5,201.71	8.73	19.835	5.165	18.20	10.51
24 x 16 x 40.8	132.60	506.21	1,092.81	8,648.89	9.86	17.086	7.914	39.00	24.00
35.7	116.40	451.45	1,074.57	7,947.40	9.71	17.604	7.396	34.23	21.00
30.6	100.09	394.47	1,054.66	7,177.28	9.51	18.195	6.805	29.44	18.00
25.5	83.67	335.17	1,032.23	6,325.43	9.21	18.872	6.128	24.61	15.00
20.4	67.15	273.46	1,005.64	5,374.90	8.78	19.655	5.345	19.75	12.00
17.85	58.92	241.92	989.94	4,860.23	8.50	20.090	4.910	17.33	10.51
24 x 14 x 40.8	125.80	462.93	1,073.39	8,085.90	9.64	17.467	7.533	37.00	24.00
35.7	110.45	412.98	1,055.32	7,420.63	9.48	17.968	7.032	32.48	21.00
30.6	94.99	360.98	1,035.50	6,691.73	9.27	18.538	6.462	27.94	18.00
25.5	79.42	306.83	1,013.04	5,887.48	8.96	19.188	5.812	23.36	15.00
20.4	63.75	250.42	986.24	4,992.84	8.52	19.937	5.062	18.75	12.00
17.85	55.94	221.58	970.32	4,509.75	8.24	20.352	4.648	16.45	10.51
24 x 12 x 40.8	119.00	419.59	1,050.83	7,496.44	9.39	17.866	7.134	35.00	24.00
35.7	104.50	374.48	1,032.98	6,871.03	9.23	18.348	6.652	30.73	21.00
30.6	89.89	327.46	1,013.30	6,187.13	9.00	18.894	6.106	26.44	18.00
25.5	75.17	278.46	990.86	5,434.35	8.68	19.516	5.484	22.11	15.00
20.4	60.35	227.38	963.87	4,599.50	8.24	20.228	4.772	17.75	12.00
17.85	52.96	201.24	947.74	4,149.91	7.96	20.621	4.379	15.58	10.51
24 x 10 x 40.8	112.20	376.19	1,024.30	6,878.57	9.10	18.285	6.715	33.00	24.00
35.7	98.55	335.93	1,006.76	6,297.09	8.93	18.745	6.255	28.98	21.00
30.6	84.79	293.92	987.29	5,662.33	8.69	19.265	5.735	24.94	18.00
25.5	70.92	250.08	964.92	4,965.23	8.37	19.854	5.146	20.86	15.00
20.4	56.95	204.33	937.79	4,194.38	7.93	20.527	4.473	16.75	12.00
17.85	49.98	180.90	921.47	3,780.32	7.64	20.898	4.102	14.70	10.51
24 x 8 x 40.8	105.40	332.74	992.66	6,230.19	8.77	18.724	6.276	31.00	24.00
35.7	92.60	297.35	975.54	5,697.13	8.59	19.160	5.840	27.23	21.00
30.6	79.69	260.35	956.39	5,116.09	8.35	19.651	5.349	23.44	18.00
25.5	66.67	221.69	934.19	4,479.27	8.02	20.205	4.795	19.61	15.00
20.4	53.55	181.27	907.00	3,776.93	7.58	20.836	4.164	15.75	12.00
17.85	47.00	160.55	890.51	3,400.59	7.30	21.181	3.819	13.82	10.51
24 x 6 x 40.8	98.60	289.23	954.28	5,549.00	8.38	19.185	5.815	29.00	24.00
35.7	86.65	258.72	937.74	5,069.37	8.19	19.594	5.406	25.48	21.00
30.6	74.59	226.76	919.07	4,547.07	7.95	20.053	4.947	21.94	18.00
25.5	62.42	193.28	897.20	3,975.53	7.63	20.569	4.431	18.36	15.00
20.4	50.15	158.20	870.08	3,346.59	7.19	21.154	3.846	14.75	12.00
17.85	44.02	140.19	853.51	3,010.29	6.92	21.473	3.527	12.95	10.51
21 x 20 x 40.8	136.00	502.30	971.38	7,284.00	9.00	14.501	7.499	40.00	21.00
35.7	119.37	447.89	956.69	6,711.45	8.88	14.985	7.015	35.11	18.37
30.6	102.64	391.24	940.45	6,078.51	8.71	15.537	6.463	30.19	15.75
25.5	85.80	332.28	921.86	5,373.36	8.45	16.171	5.829	25.23	13.12
20.4	68.85	270.94	899.38	4,580.72	8.08	16.907	5.093	20.25	10.50
17.85	60.40	239.61	885.88	4,149.12	7.82	17.316	4.684	17.77	9.20
21 x 18 x 40.8	129.20	464.44	958.56	6,882.84	8.84	14.820	7.180	38.00	21.00
35.7	113.42	414.20	943.87	6,333.22	8.72	15.290	6.710	33.36	18.37
30.6	97.54	361.88	927.55	5,727.05	8.53	15.826	6.174	28.69	15.75



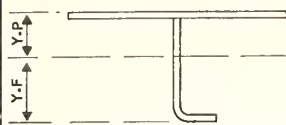
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	307.42	908.78	5,053.64	8.26	16.439	5.561	23.98	13.12
20.4	65.45	250.72	885.96	4,299.24	7.88	17.147	4.853	19.25	10.50
17.85	57.43	221.76	872.19	3,889.68	7.63	17.540	4.460	16.89	9.20
21 x 16 x 40.8	122.40	426.53	943.87	6,463.04	8.67	15.153	6.847	36.00	21.00
35.7	107.47	380.48	929.19	5,938.78	8.53	15.609	6.391	31.61	18.37
30.6	92.44	332.51	912.81	5,361.94	8.33	16.126	5.874	27.19	15.75
25.5	77.30	282.54	893.86	4,722.93	8.06	16.716	5.284	22.73	13.12
20.4	62.05	230.50	870.67	4,009.52	7.66	17.395	4.605	18.25	10.50
17.85	54.45	203.90	856.62	3,623.35	7.41	17.770	4.230	16.01	9.20
21 x 14 x 40.8	115.60	388.56	926.87	6,023.25	8.47	15.501	6.499	34.00	21.00
35.7	101.52	346.72	912.22	5,527.06	8.32	15.941	6.059	29.86	18.37
30.6	87.34	303.10	895.79	4,982.36	8.11	16.438	5.562	25.69	15.75
25.5	73.05	257.64	876.67	4,380.65	7.83	17.003	4.997	21.48	13.12
20.4	58.65	210.27	853.12	3,711.18	7.43	17.650	4.350	17.25	10.50
17.85	51.47	186.04	838.76	3,349.86	7.17	18.006	3.994	15.14	9.20
21 x 12 x 40.8	108.80	350.53	906.96	5,562.02	8.24	15.867	6.133	32.00	21.00
35.7	95.57	312.91	892.38	5,096.89	8.08	16.288	5.712	28.11	18.37
30.6	82.24	273.67	875.94	4,587.43	7.86	16.763	5.237	24.19	15.75
25.5	68.80	232.73	856.66	4,026.19	7.57	17.300	4.700	20.23	13.12
20.4	55.25	190.03	832.74	3,403.83	7.17	17.913	4.087	16.25	10.50
17.85	48.49	168.17	818.09	3,068.92	6.91	18.249	3.751	14.26	9.20
21 x 10 x 40.8	102.00	312.45	883.32	5,077.73	7.97	16.252	5.748	30.00	21.00
35.7	89.62	279.07	868.88	4,647.01	7.80	16.652	5.348	26.36	18.37
30.6	77.14	244.21	852.46	4,176.21	7.58	17.101	4.899	22.69	15.75
25.5	64.55	207.80	833.07	3,658.89	7.28	17.608	4.392	18.98	13.12
20.4	51.85	169.78	808.81	3,087.07	6.88	18.183	3.817	15.25	10.50
17.85	45.51	150.30	793.85	2,780.21	6.62	18.498	3.502	13.39	9.20
21 x 8 x 40.8	95.20	274.30	854.82	4,568.62	7.65	16.655	5.345	28.00	21.00
35.7	83.67	245.19	840.59	4,176.03	7.48	17.032	4.968	24.61	18.37
30.6	72.04	214.72	824.28	3,747.66	7.26	17.453	4.547	21.19	15.75
25.5	60.30	182.85	804.85	3,278.03	6.96	17.927	4.073	17.73	13.12
20.4	48.45	149.52	780.29	2,760.44	6.55	18.462	3.538	14.25	10.50
17.85	42.53	132.42	765.06	2,483.41	6.30	18.754	3.246	12.51	9.20
21 x 6 x 40.8	88.40	236.10	819.76	4,032.71	7.28	17.081	4.919	26.00	21.00
35.7	77.72	211.26	805.89	3,682.43	7.11	17.431	4.569	22.86	18.37
30.6	66.94	185.21	789.83	3,300.66	6.88	17.821	4.179	19.69	15.75
25.5	56.05	157.89	770.47	2,882.86	6.58	18.258	3.742	16.48	13.12
20.4	45.05	129.25	745.75	2,423.49	6.19	18.750	3.250	13.25	10.50
17.85	39.56	114.54	730.30	2,178.17	5.94	19.017	2.983	11.63	9.20
18 x 18 x 40.8	119.00	383.58	809.15	4,944.17	7.63	12.890	6.110	35.00	18.00
35.7	104.50	342.26	797.68	4,550.51	7.51	13.295	5.705	30.73	15.75
30.6	89.89	299.16	784.56	4,114.98	7.34	13.755	5.245	26.44	13.50
25.5	75.17	254.22	768.97	3,630.04	7.10	14.279	4.721	22.11	11.25
20.4	60.35	207.38	749.28	3,086.10	6.75	14.881	4.119	17.75	9.00
15.3	45.42	158.61	721.98	2,470.81	6.24	15.578	3.422	13.36	6.75
18 x 16 x 40.8	112.20	351.04	796.59	4,629.60	7.47	13.188	5.812	33.00	18.00
35.7	98.55	313.30	785.02	4,254.67	7.34	13.580	5.420	28.98	15.75
30.6	84.79	273.91	771.73	3,840.99	7.16	14.023	4.977	24.94	13.50
25.5	70.92	232.82	755.84	3,381.85	6.91	14.526	4.474	20.86	11.25
20.4	56.95	189.98	735.67	2,868.80	6.56	15.100	3.900	16.75	9.00
15.3	42.87	145.35	707.57	2,291.03	6.05	15.762	3.238	12.61	6.75
18 x 14 x 40.8	105.40	318.45	781.95	4,299.50	7.29	13.502	5.498	31.00	18.00
35.7	92.60	284.29	770.29	3,945.43	7.15	13.878	5.122	27.23	15.75
30.6	79.69	248.63	756.83	3,555.82	6.96	14.302	4.698	23.44	13.50
25.5	66.67	211.40	740.63	3,124.76	6.70	14.781	4.219	19.61	11.25
20.4	53.55	172.57	719.95	2,644.89	6.34	15.326	3.674	15.75	9.00
15.3	40.32	132.09	691.00	2,106.89	5.84	15.951	3.049	11.86	6.75



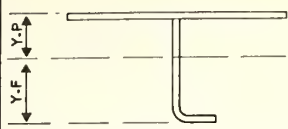
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	285.79	764.65	3,952.69	7.07	13.831	5.169	29.00	18.00
35.7	86.65	255.25	752.92	3,621.86	6.93	14.190	4.810	25.48	15.75
30.6	74.59	223.32	739.29	3,258.75	6.73	14.592	4.408	21.94	13.50
25.5	62.42	189.97	722.79	2,858.26	6.47	15.046	3.954	18.36	11.25
20.4	50.15	155.15	701.58	2,414.07	6.11	15.559	3.441	14.75	9.00
15.3	37.77	118.82	671.74	1,918.23	5.60	16.144	2.856	11.11	6.75
18 x 10 x 40.8	91.80	253.08	743.90	3,587.88	6.83	14.177	4.823	27.00	18.00
35.7	80.70	226.16	732.14	3,282.93	6.67	14.516	4.484	23.73	15.75
30.6	69.49	197.99	718.37	2,949.04	6.47	14.895	4.105	20.44	13.50
25.5	58.17	168.53	701.58	2,581.84	6.20	15.320	3.680	17.11	11.25
20.4	46.75	137.73	679.84	2,176.00	5.84	15.799	3.201	13.75	9.00
15.3	35.22	105.54	649.10	1,724.88	5.35	16.343	2.657	10.36	6.75
18 x 8 x 40.8	85.00	220.31	718.57	3,203.62	6.54	14.542	4.458	25.00	18.00
35.7	74.75	197.03	706.83	2,927.53	6.38	14.858	4.142	21.98	15.75
30.6	64.39	172.63	692.97	2,625.85	6.17	15.211	3.789	18.94	13.50
25.5	53.92	147.07	675.93	2,294.93	5.90	15.605	3.395	15.86	11.25
20.4	43.35	120.29	653.70	1,930.35	5.55	16.047	2.953	12.75	9.00
15.3	32.67	92.27	622.10	1,526.67	5.06	16.546	2.454	9.61	6.75
18 x 6 x 40.8	78.20	187.47	686.93	2,798.31	6.19	14.926	4.074	23.00	18.00
35.7	68.80	167.86	675.34	2,554.42	6.03	15.218	3.782	20.23	15.75
30.6	59.29	147.24	661.50	2,288.28	5.83	15.541	3.459	17.44	13.50
25.5	49.67	125.59	644.30	1,996.91	5.56	15.901	3.099	14.61	11.25
20.4	39.95	102.85	621.68	1,676.74	5.21	16.303	2.697	11.75	9.00
15.3	30.12	78.99	589.33	1,323.40	4.74	16.754	2.246	8.86	6.75



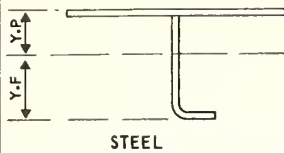
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

45.9 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,074.27	1,830.26	21,069.74	13.13	19.613	11.512	59.00	30.00
35.7	175.90	955.38	1,800.20	19,426.44	13.00	20.334	10.791	51.73	26.25
30.6	151.09	832.44	1,768.09	17,615.88	12.79	21.162	9.963	44.44	22.50
25.5	126.17	705.29	1,732.88	15,602.02	12.47	22.121	9.004	37.11	18.75
20.4	101.15	573.76	1,692.52	13,337.09	11.98	23.245	7.880	29.75	15.00
17.85	88.70	506.85	1,669.36	12,101.44	11.64	23.876	7.249	26.09	13.14
30 x 27 x 40.8	190.40	992.64	1,808.17	19,945.99	12.93	20.094	11.031	56.00	30.00
35.7	166.97	882.89	1,778.24	18,362.86	12.78	20.799	10.326	49.11	26.25
30.6	143.44	769.38	1,746.16	16,622.83	12.56	21.605	9.520	42.19	22.50
25.5	119.80	651.97	1,710.83	14,693.17	12.21	22.537	8.588	35.23	18.75
20.4	96.05	530.48	1,670.10	12,530.90	11.70	23.622	7.503	28.25	15.00
17.85	84.23	468.66	1,646.61	11,355.07	11.36	24.229	6.896	24.77	13.14
30 x 24 x 40.8	180.20	910.90	1,782.76	18,764.24	12.70	20.600	10.525	53.00	30.00
35.7	158.05	810.33	1,753.00	17,248.41	12.54	21.286	9.839	46.48	26.25
30.6	135.79	706.28	1,720.98	15,586.47	12.29	22.068	9.057	39.94	22.50
25.5	113.42	598.62	1,685.55	13,749.05	11.93	22.968	8.157	33.36	18.75
20.4	90.95	487.18	1,644.45	11,697.85	11.40	24.011	7.114	26.75	15.00
17.85	79.76	430.45	1,620.61	10,586.07	11.05	24.593	6.532	23.46	13.14
30 x 21 x 40.8	170.00	829.07	1,753.22	17,519.91	12.44	21.132	9.993	50.00	30.00
35.7	149.12	737.70	1,723.69	16,079.34	12.25	21.797	9.328	43.86	26.25
30.6	128.14	643.14	1,691.78	14,503.92	11.99	22.552	8.573	37.69	22.50
25.5	107.05	545.24	1,656.27	12,767.55	11.61	23.416	7.709	31.48	18.75
20.4	85.85	443.86	1,614.79	10,836.55	11.07	24.414	6.711	25.25	15.00
17.85	75.30	392.24	1,590.58	9,793.41	10.71	24.968	6.157	22.15	13.14
30 x 18 x 40.8	159.80	747.13	1,718.47	16,207.86	12.12	21.693	9.432	47.00	30.00
35.7	140.20	665.00	1,689.24	14,851.54	11.92	22.333	8.792	41.23	26.25
30.6	120.49	579.94	1,657.51	13,372.01	11.64	23.057	8.068	35.44	22.50
25.5	100.67	491.83	1,621.97	11,746.43	11.25	23.883	7.242	29.61	18.75
20.4	80.75	400.53	1,580.12	9,945.56	10.69	24.831	6.294	23.75	15.00
17.85	70.83	354.02	1,555.53	8,975.98	10.33	25.355	5.770	20.83	13.14
30 x 15 x 40.8	149.60	665.09	1,676.99	14,822.44	11.76	22.286	8.839	44.00	30.00
35.7	131.27	592.23	1,648.18	13,560.46	11.54	22.897	8.228	38.61	26.25
30.6	112.84	516.70	1,616.71	12,187.28	11.24	23.587	7.538	33.19	22.50
25.5	94.30	438.40	1,581.21	10,683.21	10.84	24.369	6.756	27.73	18.75
20.4	75.65	357.19	1,539.04	9,023.30	10.27	25.262	5.863	22.25	15.00
17.85	66.36	315.78	1,514.08	8,132.59	9.91	25.754	5.371	19.52	13.14
30 x 12 x 40.8	139.40	582.95	1,626.60	13,357.28	11.32	22.913	8.212	41.00	30.00
35.7	122.35	519.38	1,598.37	12,201.08	11.09	23.492	7.633	35.98	26.25
30.6	105.19	453.41	1,567.33	10,945.96	10.78	24.141	6.984	30.94	22.50
25.5	87.92	384.94	1,532.00	9,575.26	10.37	24.875	6.250	25.86	18.75
20.4	70.55	313.83	1,489.60	8,068.11	9.80	25.709	5.416	20.75	15.00
17.85	61.89	277.54	1,464.29	7,262.00	9.44	26.166	4.959	18.20	13.14
30 x 9 x 40.8	129.20	500.71	1,564.10	11,805.32	10.80	23.577	7.548	38.00	30.00
35.7	113.42	446.47	1,536.72	10,767.85	10.56	24.118	7.007	33.36	26.25
30.6	97.54	390.08	1,506.34	9,643.88	10.24	24.723	6.402	28.69	22.50
25.5	81.55	331.45	1,471.40	8,419.69	9.82	25.403	5.722	23.98	18.75
20.4	65.45	270.45	1,428.95	7,078.18	9.26	26.172	4.953	19.25	15.00
17.85	57.43	239.29	1,403.38	6,362.85	8.91	26.591	4.534	16.89	13.14
30 x 6 x 40.8	119.00	418.36	1,484.52	10,158.60	10.17	24.282	6.843	35.00	30.00
35.7	104.50	373.48	1,458.42	9,254.56	9.92	24.779	6.346	30.73	26.25
30.6	89.89	326.70	1,429.10	8,276.48	9.61	25.334	5.791	26.44	22.50
25.5	75.17	277.93	1,394.93	7,213.34	9.19	25.954	5.171	22.11	18.75
20.4	60.35	227.06	1,352.80	6,051.59	8.64	26.652	4.473	17.75	15.00
17.85	52.96	201.02	1,327.13	5,433.73	8.30	27.031	4.094	15.58	13.14
27 x 27 x 40.8	180.20	873.16	1,612.38	15,930.67	11.71	18.245	9.880	53.00	27.00
35.7	158.05	776.66	1,587.39	14,667.28	11.56	18.885	9.240	46.48	23.62
30.6	135.79	676.78	1,560.24	13,275.88	11.34	19.616	8.509	39.94	20.25

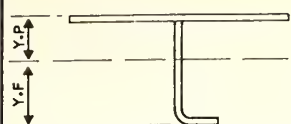


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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45.9 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	573.43	1,529.78	11,730.63	11.02	20.457	7.668	33.36	16.87
20.4	90.95	466.49	1,493.85	9,997.88	10.54	21.432	6.693	26.75	13.50
17.85	79.76	412.07	1,472.69	9,055.63	10.22	21.976	6.149	23.46	11.83
27 x 24 x 40.8	170.00	799.41	1,589.85	14,960.76	11.49	18.715	9.410	50.00	27.00
35.7	149.12	711.16	1,564.90	13,751.89	11.33	19.337	8.788	43.86	23.62
30.6	128.14	619.82	1,537.65	12,424.21	11.09	20.045	8.080	37.69	20.25
25.5	107.05	525.26	1,506.94	10,954.64	10.75	20.856	7.269	31.48	16.87
20.4	85.85	427.39	1,470.46	9,313.41	10.26	21.791	6.334	25.25	13.50
17.85	75.30	377.58	1,448.85	8,424.04	9.93	22.311	5.814	22.15	11.83
27 x 21 x 40.8	159.80	725.55	1,563.52	13,938.09	11.24	19.210	8.915	47.00	27.00
35.7	140.20	645.59	1,538.63	12,790.52	11.06	19.812	8.313	41.23	23.62
30.6	120.49	562.80	1,511.33	11,533.71	10.81	20.493	7.632	35.44	20.25
25.5	100.67	477.06	1,480.35	10,147.33	10.45	21.270	6.855	29.61	16.87
20.4	80.75	388.28	1,443.30	8,605.34	9.95	22.163	5.962	23.75	13.50
17.85	70.83	343.08	1,421.22	7,772.71	9.61	22.656	5.469	20.83	11.83
27 x 18 x 40.8	149.60	651.58	1,532.35	12,858.22	10.95	19.734	8.391	44.00	27.00
35.7	131.27	579.95	1,507.57	11,779.60	10.75	20.311	7.814	38.61	23.62
30.6	112.84	505.74	1,480.24	10,601.66	10.48	20.963	7.162	33.19	20.25
25.5	94.30	428.84	1,449.02	9,306.73	10.11	21.702	6.423	27.73	16.87
20.4	75.65	349.15	1,411.37	7,872.42	9.60	22.547	5.578	22.25	13.50
17.85	66.36	308.56	1,388.80	7,100.70	9.26	23.012	5.113	19.52	11.83
27 x 15 x 40.8	139.40	577.51	1,494.86	11,716.21	10.60	20.287	7.838	41.00	27.00
35.7	122.35	514.24	1,470.27	10,715.20	10.39	20.837	7.288	35.98	23.62
30.6	105.19	448.62	1,442.97	9,625.09	10.11	21.455	6.670	30.94	20.25
25.5	87.92	380.58	1,411.55	8,430.77	9.73	22.152	5.973	25.86	16.87
20.4	70.55	310.01	1,373.31	7,113.33	9.20	22.945	5.180	20.75	13.50
17.85	61.89	274.04	1,350.22	6,407.00	8.87	23.380	4.745	18.20	11.83
27 x 12 x 40.8	129.20	503.34	1,448.90	10,506.55	10.19	20.874	7.251	38.00	27.00
35.7	113.42	448.45	1,424.64	9,592.98	9.96	21.391	6.734	33.36	23.62
30.6	97.54	391.47	1,397.49	8,600.72	9.67	21.971	6.154	28.69	20.25
25.5	81.55	332.30	1,365.94	7,517.15	9.28	22.622	5.503	23.98	16.87
20.4	65.45	270.86	1,327.16	6,326.63	8.76	23.358	4.767	19.25	13.50
17.85	57.43	239.51	1,303.56	5,690.56	8.43	23.760	4.365	16.89	11.83
27 x 9 x 40.8	119.00	429.06	1,391.25	9,223.02	9.69	21.496	6.629	35.00	27.00
35.7	104.50	382.59	1,367.53	8,408.07	9.46	21.977	6.148	30.73	23.62
30.6	89.89	334.26	1,340.71	7,524.96	9.16	22.512	5.613	26.44	20.25
25.5	75.17	283.99	1,309.22	6,563.40	8.77	23.112	5.013	22.11	16.87
20.4	60.35	231.68	1,270.03	5,510.80	8.25	23.786	4.339	17.75	13.50
17.85	52.96	204.96	1,245.98	4,950.24	7.92	24.152	3.973	15.58	11.83
27 x 6 x 40.8	108.80	354.68	1,316.80	7,858.66	9.08	22.157	5.968	32.00	27.00
35.7	95.57	316.66	1,293.99	7,155.09	8.85	22.596	5.529	28.11	23.62
30.6	82.24	277.01	1,267.86	6,393.84	8.55	23.082	5.043	24.19	20.25
25.5	68.80	235.64	1,236.75	5,566.82	8.17	23.624	4.501	20.23	16.87
20.4	55.25	192.50	1,197.47	4,664.19	7.66	24.230	3.895	16.25	13.50
17.85	48.49	170.41	1,173.12	4,184.81	7.35	24.558	3.567	14.26	11.83
24 x 24 x 40.8	159.80	691.98	1,398.71	11,631.55	10.27	16.809	8.316	47.00	24.00
35.7	140.20	615.68	1,378.10	10,692.14	10.12	17.366	7.759	41.23	21.00
30.6	120.49	536.64	1,355.17	9,658.37	9.89	17.998	7.127	35.44	18.00
25.5	100.67	454.77	1,328.71	8,512.61	9.57	18.718	6.407	29.61	15.00
20.4	80.75	370.01	1,296.42	7,232.27	9.12	19.546	5.579	23.75	12.00
17.85	70.83	326.86	1,276.85	6,538.55	8.82	20.004	5.121	20.83	10.51
24 x 22 x 40.8	153.00	648.12	1,383.68	11,089.58	10.12	17.110	8.015	45.00	24.00
35.7	134.25	576.73	1,363.00	10,181.96	9.96	17.655	7.470	39.48	21.00
30.6	115.39	502.75	1,339.92	9,185.26	9.72	18.270	6.855	33.94	18.00
25.5	96.42	426.12	1,313.19	8,083.32	9.39	18.969	6.156	28.36	15.00
20.4	77.35	346.75	1,280.39	6,855.57	8.93	19.771	5.354	22.75	12.00
17.85	67.85	306.35	1,260.45	6,192.02	8.63	20.212	4.913	19.96	10.51

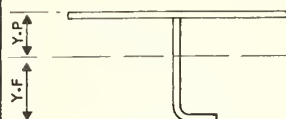


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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45.9 # PLATE WEIGHT

NOMINAL SIZE IN. x IN. x LBS./FT. ²	WEIGHT PER FOOT LBS.	SECTION MODULUS		I IN. ⁴	r IN.	YF IN.	YP IN.	BEAM DIMENSIONS	
		LESSER IN. ³	GREATER IN. ³					AREA IN. ²	SHEAR AREA IN. ²
24 x 20 x 40.8	146.20	604.21	1,366.83	10,527.22	9.95	17.423	7.702	43.00	24.00
35.7	128.30	537.74	1,346.10	9,654.10	9.78	17.953	7.172	37.73	21.00
30.6	110.29	468.85	1,322.87	8,697.32	9.53	18.550	6.575	32.44	18.00
25.5	92.17	397.46	1,295.85	7,642.16	9.20	19.228	5.897	27.11	15.00
20.4	73.95	323.49	1,262.53	6,470.00	8.72	20.000	5.125	21.75	12.00
17.85	64.87	285.83	1,242.20	5,838.11	8.42	20.425	4.700	19.08	10.51
24 x 18 x 40.8	139.40	560.26	1,347.83	9,943.28	9.77	17.748	7.377	41.00	24.00
35.7	122.35	498.72	1,327.06	9,107.63	9.58	18.262	6.863	35.98	21.00
30.6	105.19	434.92	1,303.69	8,193.84	9.33	18.840	6.285	30.94	18.00
25.5	87.92	368.78	1,276.37	7,188.62	8.98	19.493	5.632	25.86	15.00
20.4	70.55	300.23	1,242.51	6,075.26	8.50	20.235	4.890	20.75	12.00
17.85	61.89	265.31	1,221.77	5,476.58	8.20	20.642	4.483	18.20	10.51
24 x 16 x 40.8	132.60	516.25	1,326.23	9,336.51	9.56	18.085	7.040	39.00	24.00
35.7	116.40	459.67	1,305.44	8,541.54	9.36	18.582	6.543	34.23	21.00
30.6	100.09	400.97	1,281.94	7,674.06	9.10	19.139	5.986	29.44	18.00
25.5	83.67	340.09	1,254.33	6,722.17	8.75	19.766	5.359	24.61	15.00
20.4	67.15	276.96	1,219.91	5,671.01	8.27	20.476	4.649	19.75	12.00
17.85	58.92	244.78	1,198.74	5,107.20	7.96	20.865	4.260	17.33	10.51
24 x 14 x 40.8	125.80	472.20	1,301.46	8,705.53	9.32	18.436	6.689	37.00	24.00
35.7	110.45	420.58	1,280.68	7,954.75	9.12	18.914	6.211	32.48	21.00
30.6	94.99	367.00	1,257.07	7,137.19	8.85	19.447	5.678	27.94	18.00
25.5	79.42	311.39	1,229.17	6,242.27	8.49	20.047	5.078	23.36	15.00
20.4	63.75	253.68	1,194.19	5,256.90	8.01	20.723	4.402	18.75	12.00
17.85	55.94	224.25	1,172.59	4,729.70	7.70	21.091	4.034	16.45	10.51
24 x 12 x 40.8	119.00	428.11	1,272.76	8,048.87	9.05	18.801	6.324	35.00	24.00
35.7	104.50	381.46	1,252.04	7,346.13	8.84	19.258	5.867	30.73	21.00
30.6	89.89	333.01	1,228.36	6,582.36	8.57	19.766	5.359	26.44	18.00
25.5	75.17	282.67	1,200.20	5,748.30	8.21	20.336	4.789	22.11	15.00
20.4	60.35	230.39	1,164.67	4,832.56	7.72	20.976	4.149	17.75	12.00
17.85	52.96	203.71	1,142.63	4,343.81	7.42	21.323	3.802	15.58	10.51
24 x 10 x 40.8	112.20	383.96	1,239.12	7,364.92	8.75	19.181	5.944	33.00	24.00
35.7	98.55	342.31	1,218.53	6,714.40	8.53	19.615	5.510	28.98	21.00
30.6	84.79	299.00	1,194.85	6,008.66	8.25	20.096	5.029	24.94	18.00
25.5	70.92	253.94	1,166.48	5,239.66	7.89	20.633	4.492	20.86	15.00
20.4	56.95	207.10	1,130.42	4,397.62	7.41	21.235	3.890	16.75	12.00
17.85	49.98	183.17	1,107.96	3,949.24	7.12	21.561	3.564	14.70	10.51
24 x 8 x 40.8	105.40	339.77	1,199.15	6,651.96	8.40	19.578	5.547	31.00	24.00
35.7	92.60	303.13	1,178.80	6,058.25	8.18	19.986	5.139	27.23	21.00
30.6	79.69	264.96	1,155.21	5,415.11	7.90	20.437	4.688	23.44	18.00
25.5	66.67	225.20	1,126.72	4,715.67	7.54	20.940	4.185	19.61	15.00
20.4	53.55	183.79	1,090.23	3,951.66	7.07	21.500	3.625	15.75	12.00
17.85	47.00	162.62	1,067.38	3,545.71	6.78	21.803	3.322	13.82	10.51
24 x 6 x 40.8	98.60	295.53	1,150.86	5,908.09	8.00	19.991	5.134	29.00	24.00
35.7	86.65	263.91	1,130.93	5,376.22	7.78	20.371	4.754	25.48	21.00
30.6	74.59	230.90	1,107.60	4,800.66	7.51	20.791	4.334	21.94	18.00
25.5	62.42	196.45	1,079.15	4,175.64	7.15	21.256	3.869	18.36	15.00
20.4	50.15	160.49	1,042.39	3,494.27	6.69	21.773	3.352	14.75	12.00
17.85	44.02	142.07	1,019.25	3,132.89	6.41	22.051	3.074	12.95	10.51
21 x 20 x 40.8	136.00	511.77	1,181.44	7,900.54	8.75	15.438	6.687	40.00	21.00
35.7	119.37	455.60	1,164.39	7,245.29	8.58	15.903	6.222	35.11	18.37
30.6	102.64	397.33	1,144.81	6,525.93	8.36	16.425	5.700	30.19	15.75
25.5	85.80	336.88	1,121.39	5,731.67	8.05	17.014	5.111	25.23	13.12
20.4	68.85	274.22	1,091.63	4,849.02	7.62	17.683	4.442	20.25	10.50
17.85	60.40	242.30	1,073.05	4,373.32	7.35	18.049	4.076	17.77	9.20
21 x 18 x 40.8	129.20	473.23	1,164.76	7,445.28	8.58	15.733	6.392	38.00	21.00
35.7	113.42	421.38	1,147.55	6,819.05	8.40	16.183	5.942	33.36	18.37
30.6	97.54	367.55	1,127.72	6,133.17	8.17	16.686	5.439	28.69	15.75



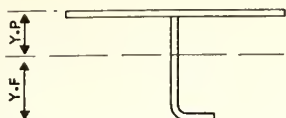
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

45.9 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	311.71	1,103.88	5,377.97	7.85	17.253	4.872	23.98	13.12
20.4	65.45	253.79	1,073.45	4,541.41	7.42	17.894	4.231	19.25	10.50
17.85	57.43	224.28	1,054.39	4,091.76	7.15	18.244	3.881	16.89	9.20
21 x 16 x 40.8	122.40	434.65	1,145.68	6,971.68	8.38	16.040	6.085	36.00	21.00
35.7	107.47	387.12	1,128.33	6,377.09	8.20	16.473	5.652	31.61	18.37
30.6	92.44	337.76	1,108.23	5,727.39	7.96	16.957	5.168	27.19	15.75
25.5	77.30	286.52	1,083.96	5,013.98	7.64	17.499	4.626	22.73	13.12
20.4	62.05	233.35	1,052.83	4,226.24	7.20	18.111	4.014	18.25	10.50
17.85	54.45	206.25	1,033.28	3,803.98	6.93	18.444	3.681	16.01	9.20
21 x 14 x 40.8	115.60	396.02	1,123.67	6,478.61	8.16	16.359	5.766	34.00	21.00
35.7	101.52	352.83	1,106.18	5,918.51	7.97	16.775	5.350	29.86	18.37
30.6	87.34	307.94	1,085.83	5,307.92	7.73	17.237	4.888	25.69	15.75
25.5	73.05	261.32	1,061.11	4,639.26	7.40	17.753	4.372	21.48	13.12
20.4	58.65	212.91	1,029.25	3,903.25	6.96	18.333	3.792	17.25	10.50
17.85	51.47	188.22	1,009.19	3,509.77	6.69	18.647	3.478	15.14	9.20
21 x 12 x 40.8	108.80	357.34	1,097.98	5,964.84	7.91	16.692	5.433	32.00	21.00
35.7	95.57	318.50	1,080.38	5,442.38	7.72	17.088	5.037	28.11	18.37
30.6	82.24	278.11	1,059.78	4,874.06	7.47	17.526	4.599	24.19	15.75
25.5	68.80	236.11	1,034.63	4,253.31	7.14	18.014	4.111	20.23	13.12
20.4	55.25	192.46	1,002.04	3,572.13	6.70	18.560	3.565	16.25	10.50
17.85	48.49	170.18	981.45	3,208.90	6.43	18.855	3.270	14.26	9.20
21 x 10 x 40.8	102.00	318.61	1,067.60	5,429.04	7.63	17.040	5.085	30.00	21.00
35.7	89.62	284.14	1,049.95	4,947.65	7.43	17.413	4.712	26.36	18.37
30.6	77.14	248.25	1,029.14	4,425.06	7.18	17.825	4.300	22.69	15.75
25.5	64.55	210.88	1,003.58	3,855.64	6.85	18.283	3.842	18.98	13.12
20.4	51.85	172.01	970.28	3,232.58	6.42	18.793	3.332	15.25	10.50
17.85	45.51	152.14	949.17	2,901.16	6.15	19.068	3.057	13.39	9.20
21 x 8 x 40.8	95.20	279.84	1,031.12	4,869.75	7.31	17.402	4.723	28.00	21.00
35.7	83.67	249.75	1,013.50	4,433.22	7.10	17.751	4.374	24.61	18.37
30.6	72.04	218.37	992.57	3,960.11	6.85	18.135	3.990	21.19	15.75
25.5	60.30	185.65	966.67	3,445.69	6.52	18.561	3.564	17.73	13.12
20.4	48.45	151.54	932.71	2,884.26	6.10	19.033	3.092	14.25	10.50
17.85	42.53	134.10	911.13	2,586.30	5.84	19.286	2.839	12.51	9.20
21 x 6 x 40.8	88.40	241.01	986.51	4,285.41	6.93	17.781	4.344	26.00	21.00
35.7	77.72	215.32	969.07	3,897.88	6.73	18.103	4.022	22.86	18.37
30.6	66.94	188.46	948.15	3,478.35	6.48	18.456	3.669	19.69	15.75
25.5	56.05	160.39	922.06	3,022.88	6.16	18.847	3.278	16.48	13.12
20.4	45.05	131.07	887.60	2,526.84	5.75	19.278	2.847	13.25	10.50
17.85	39.56	116.05	865.63	2,264.08	5.50	19.509	2.616	11.63	9.20
18 x 18 x 40.8	119.00	390.60	982.99	5,345.95	7.38	13.687	5.438	35.00	18.00
35.7	104.50	348.00	968.92	4,896.76	7.22	14.071	5.054	30.73	15.75
30.6	89.89	303.70	952.20	4,403.77	7.01	14.500	4.625	26.44	13.50
25.5	75.17	257.68	931.47	3,860.19	6.72	14.981	4.144	22.11	11.25
20.4	60.35	209.88	904.17	3,257.73	6.34	15.522	3.603	17.75	9.00
15.3	45.42	160.28	864.83	2,586.05	5.81	16.135	2.990	13.36	6.75
18 x 16 x 40.8	112.20	357.49	966.37	4,990.78	7.20	13.961	5.164	33.00	18.00
35.7	98.55	318.58	952.04	4,565.20	7.04	14.330	4.795	28.98	15.75
30.6	84.79	278.10	934.94	4,099.33	6.82	14.740	4.385	24.94	13.50
25.5	70.92	236.02	913.66	3,587.20	6.53	15.199	3.926	20.86	11.25
20.4	56.95	192.30	885.54	3,021.56	6.15	15.713	3.412	16.75	9.00
15.3	42.87	146.90	844.96	2,393.42	5.62	16.292	2.833	12.61	6.75
18 x 14 x 40.8	105.40	324.34	947.07	4,620.55	7.00	14.246	4.879	31.00	18.00
35.7	92.60	289.13	932.47	4,220.81	6.83	14.599	4.526	27.23	15.75
30.6	79.69	252.48	914.98	3,784.35	6.61	14.989	4.136	23.44	13.50
25.5	66.67	214.35	893.12	3,305.98	6.32	15.423	3.702	19.61	11.25
20.4	53.55	174.71	864.14	2,779.41	5.93	15.909	3.216	15.75	9.00
15.3	40.32	133.53	822.28	2,196.94	5.41	16.453	2.672	11.86	6.75



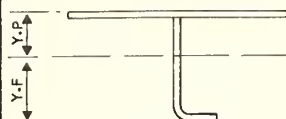
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	291.13	924.36	4,234.28	6.77	14.544	4.581	29.00	18.00
35.7	86.65	259.64	909.50	3,862.84	6.60	14.878	4.247	25.48	15.75
30.6	74.59	226.83	891.61	3,458.29	6.37	15.246	3.879	21.94	13.50
25.5	62.42	192.67	869.16	3,016.15	6.08	15.655	3.470	18.36	11.25
20.4	50.15	157.12	839.31	2,531.05	5.70	16.109	3.016	14.75	9.00
15.3	37.77	120.15	796.15	1,996.50	5.18	16.617	2.508	11.11	6.75
18 x 10 x 40.8	91.80	257.88	897.26	3,830.89	6.52	14.855	4.270	27.00	18.00
35.7	80.70	230.12	882.17	3,490.48	6.33	15.168	3.957	23.73	15.75
30.6	69.49	201.16	863.90	3,120.54	6.11	15.513	3.612	20.44	13.50
25.5	58.17	170.97	840.87	2,717.30	5.82	15.893	3.232	17.11	11.25
20.4	46.75	139.52	810.15	2,276.24	5.44	16.315	2.810	13.75	9.00
15.3	35.22	106.76	765.70	1,791.97	4.93	16.785	2.340	10.36	6.75
18 x 8 x 40.8	85.00	224.58	864.36	3,409.23	6.22	15.181	3.944	25.00	18.00
35.7	74.75	200.56	849.10	3,102.82	6.03	15.471	3.654	21.98	15.75
30.6	64.39	175.47	830.51	2,770.46	5.81	15.789	3.336	18.94	13.50
25.5	53.92	149.26	806.95	2,409.00	5.52	16.140	2.985	15.86	11.25
20.4	43.35	121.91	775.41	2,014.73	5.15	16.527	2.598	12.75	9.00
15.3	32.67	93.38	729.79	1,583.24	4.66	16.956	2.169	9.61	6.75
18 x 6 x 40.8	78.20	191.22	823.58	2,968.01	5.87	15.521	3.604	23.00	18.00
35.7	68.80	170.97	808.27	2,698.93	5.69	15.786	3.339	20.23	15.75
30.6	59.29	149.75	789.48	2,407.37	5.46	16.076	3.049	17.44	13.50
25.5	49.67	127.54	765.52	2,090.81	5.18	16.394	2.731	14.61	11.25
20.4	39.95	104.29	733.33	1,746.25	4.83	16.744	2.381	11.75	9.00
15.3	30.12	79.99	686.78	1,370.16	4.36	17.130	1.995	8.86	6.75



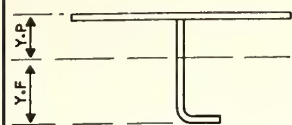
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,092.25	2,185.49	22,758.60	12.88	20.836	10.414	59.00	30.00
35.7	175.90	969.99	2,152.73	20,896.58	12.69	21.543	9.707	51.73	26.25
30.6	151.09	843.91	2,116.78	18,855.17	12.40	22.343	8.907	44.44	22.50
25.5	126.17	713.89	2,075.95	16,600.46	12.00	23.253	7.997	37.11	18.75
20.4	101.15	579.81	2,026.97	14,088.95	11.43	24.299	6.951	29.75	15.00
17.85	88.70	511.76	1,997.71	12,731.15	11.05	24.877	6.373	26.09	13.14
30 x 27 x 40.8	190.40	1,009.32	2,157.91	21,489.88	12.66	21.291	9.959	56.00	30.00
35.7	166.97	896.47	2,125.10	19,703.00	12.44	21.978	9.272	49.11	26.25
30.6	143.44	780.06	2,088.94	17,748.97	12.15	22.753	8.497	42.19	22.50
25.5	119.80	659.98	2,047.67	15,597.29	11.73	23.633	7.617	35.23	18.75
20.4	96.05	536.12	1,997.86	13,209.14	11.14	24.638	6.612	28.25	15.00
17.85	84.23	473.24	1,967.98	11,921.98	10.76	25.192	6.058	24.77	13.14
30 x 24 x 40.8	180.20	926.31	2,126.25	20,163.12	12.40	21.767	9.483	53.00	30.00
35.7	158.05	822.89	2,093.40	18,459.14	12.17	22.432	8.818	46.48	26.25
30.6	135.79	716.17	2,057.04	16,600.61	11.86	23.180	8.070	39.94	22.50
25.5	113.42	606.05	2,015.31	14,560.37	11.43	24.025	7.225	33.36	18.75
20.4	90.95	492.42	1,964.64	12,304.16	10.83	24.987	6.263	26.75	15.00
17.85	79.76	434.72	1,934.08	11,091.88	10.45	25.515	5.735	23.46	13.14
30 x 21 x 40.8	170.00	843.22	2,089.51	18,774.23	12.10	22.265	8.985	50.00	30.00
35.7	149.12	749.24	2,056.66	17,161.76	11.86	22.906	8.344	43.86	26.25
30.6	128.14	652.23	2,020.12	15,407.64	11.53	23.623	7.627	37.69	22.50
25.5	107.05	552.09	1,977.93	13,487.99	11.09	24.431	6.819	31.48	18.75
20.4	85.85	448.70	1,926.35	11,372.92	10.49	25.346	5.904	25.25	15.00
17.85	75.30	396.19	1,895.08	10,240.03	10.11	25.847	5.403	22.15	13.14
30 x 18 x 40.8	159.80	760.03	2,046.37	17,318.77	11.76	22.787	8.463	47.00	30.00
35.7	140.20	675.54	2,013.58	15,807.31	11.51	23.400	7.850	41.23	26.25
30.6	120.49	588.26	1,976.89	14,167.39	11.17	24.083	7.167	35.44	22.50
25.5	100.67	498.11	1,934.25	12,378.28	10.72	24.850	6.400	29.61	18.75
20.4	80.75	404.98	1,881.75	10,414.25	10.11	25.716	5.534	23.75	15.00
17.85	70.83	357.64	1,849.74	9,365.55	9.73	26.187	5.063	20.83	13.14
30 x 15 x 40.8	149.60	676.76	1,995.00	15,791.80	11.37	23.334	7.916	44.00	30.00
35.7	131.27	601.77	1,962.36	14,391.96	11.10	23.916	7.334	38.61	26.25
30.6	112.84	524.25	1,925.60	12,877.02	10.76	24.563	6.687	33.19	22.50
25.5	94.30	444.11	1,882.56	11,229.26	10.30	25.285	5.965	27.73	18.75
20.4	75.65	361.24	1,829.12	9,426.94	9.69	26.096	5.154	22.25	15.00
17.85	66.36	319.09	1,796.36	8,467.54	9.31	26.536	4.714	19.52	13.14
30 x 12 x 40.8	139.40	593.41	1,932.79	14,187.94	10.91	23.909	7.341	41.00	30.00
35.7	122.35	527.95	1,900.46	12,911.51	10.64	24.456	6.794	35.98	26.25
30.6	105.19	460.20	1,863.75	11,533.40	10.28	25.062	6.188	30.94	22.50
25.5	87.92	390.08	1,820.41	10,038.80	9.83	25.735	5.515	25.86	18.75
20.4	70.55	317.49	1,766.11	8,409.66	9.22	26.488	4.762	20.75	15.00
17.85	61.89	280.53	1,732.60	7,545.03	8.85	26.895	4.355	18.20	13.14
30 x 9 x 40.8	129.20	509.96	1,855.92	12,501.22	10.38	24.514	6.736	38.00	30.00
35.7	113.42	454.06	1,824.13	11,361.34	10.10	25.022	6.228	33.36	26.25
30.6	97.54	396.11	1,787.71	10,133.18	9.74	25.582	5.668	28.69	22.50
25.5	81.55	336.03	1,744.27	8,804.63	9.29	26.202	5.048	23.98	18.75
20.4	65.45	273.72	1,689.28	7,361.05	8.69	26.892	4.358	19.25	15.00
17.85	57.43	241.97	1,655.12	6,597.00	8.33	27.264	3.986	16.89	13.14
30 x 6 x 40.8	119.00	426.43	1,758.49	10,725.06	9.74	25.151	6.099	35.00	30.00
35.7	104.50	380.11	1,727.68	9,736.41	9.46	25.614	5.636	30.73	26.25
30.6	89.89	331.98	1,691.96	8,672.71	9.11	26.124	5.126	26.44	22.50
25.5	75.17	281.95	1,648.81	7,524.29	8.66	26.687	4.563	22.11	18.75
20.4	60.35	229.94	1,593.54	6,279.63	8.09	27.309	3.941	17.75	15.00
17.85	52.96	203.39	1,558.93	5,622.39	7.75	27.643	3.607	15.58	13.14
27 x 27 x 40.8	180.20	887.32	1,925.70	17,159.91	11.44	19.339	8.911	53.00	27.00
35.7	158.05	788.16	1,897.73	15,731.85	11.24	19.960	8.290	46.48	23.62
30.6	135.79	685.83	1,866.37	14,168.25	10.95	20.659	7.591	39.94	20.25



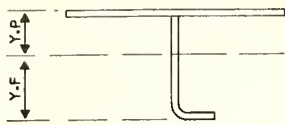
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	580.23	1,829.83	12,445.19	10.57	21.449	6.801	33.36	16.87
20.4	90.95	471.29	1,784.67	10,532.55	10.02	22.348	5.902	26.75	13.50
17.85	79.76	415.99	1,757.05	9,502.04	9.67	22.842	5.408	23.46	11.83
27 x 24 x 40.8	170.00	812.43	1,897.31	16,070.01	11.20	19.780	8.470	50.00	27.00
35.7	149.12	721.76	1,869.15	14,709.68	10.98	20.380	7.870	43.86	23.62
30.6	128.14	628.16	1,837.43	13,224.45	10.69	21.053	7.197	37.69	20.25
25.5	107.05	531.55	1,800.26	11,593.16	10.28	21.810	6.440	31.48	16.87
20.4	85.85	431.84	1,754.05	9,789.38	9.73	22.669	5.581	25.25	13.50
17.85	75.30	381.21	1,725.66	8,820.70	9.38	23.139	5.111	22.15	11.83
27 x 21 x 40.8	159.80	737.46	1,864.21	14,927.85	10.92	20.242	8.008	47.00	27.00
35.7	140.20	655.30	1,835.87	13,642.55	10.69	20.819	7.431	41.23	23.62
30.6	120.49	570.45	1,803.77	12,243.25	10.38	21.462	6.788	35.44	20.25
25.5	100.67	482.84	1,765.95	10,711.48	9.97	22.184	6.066	29.61	16.87
20.4	80.75	392.38	1,718.62	9,024.33	9.41	22.999	5.251	23.75	13.50
17.85	70.83	346.43	1,689.41	8,121.26	9.06	23.443	4.807	20.83	11.83
27 x 18 x 40.8	149.60	662.39	1,825.10	13,729.59	10.60	20.727	7.523	44.00	27.00
35.7	131.27	588.77	1,796.61	12,527.43	10.36	21.277	6.973	38.61	23.62
30.6	112.84	512.70	1,764.16	11,222.39	10.04	21.889	6.361	33.19	20.25
25.5	94.30	434.11	1,725.66	9,798.57	9.62	22.572	5.678	27.73	16.87
20.4	75.65	352.90	1,677.15	8,236.42	9.06	23.339	4.911	22.25	13.50
17.85	66.36	311.63	1,647.08	7,403.00	8.71	23.755	4.495	19.52	11.83
27 x 15 x 40.8	139.40	587.24	1,778.21	12,470.99	10.23	21.237	7.013	41.00	27.00
35.7	122.35	522.19	1,749.63	11,361.02	9.98	21.757	6.493	35.98	23.62
30.6	105.19	454.92	1,716.84	10,159.42	9.65	22.333	5.917	30.94	20.25
25.5	87.92	385.35	1,677.67	8,852.73	9.23	22.973	5.277	25.86	16.87
20.4	70.55	313.42	1,627.96	7,424.60	8.67	23.689	4.561	20.75	13.50
17.85	61.89	276.83	1,596.99	6,665.15	8.32	24.076	4.174	18.20	11.83
27 x 12 x 40.8	129.20	511.99	1,720.93	11,147.38	9.80	21.772	6.478	38.00	27.00
35.7	113.42	455.54	1,692.37	10,139.69	9.54	22.259	5.991	33.36	23.62
30.6	97.54	397.09	1,659.34	9,051.66	9.21	22.795	5.455	28.69	20.25
25.5	81.55	336.57	1,619.56	7,872.17	8.78	23.389	4.861	23.98	16.87
20.4	65.45	273.92	1,568.66	6,587.77	8.23	24.050	4.200	19.25	13.50
17.85	57.43	242.02	1,536.79	5,906.88	7.88	24.406	3.844	16.89	11.83
27 x 9 x 40.8	119.00	436.66	1,649.40	9,753.57	9.29	22.337	5.913	35.00	27.00
35.7	104.50	388.83	1,621.06	8,859.47	9.02	22.785	5.465	30.73	23.62
30.6	89.89	339.22	1,587.97	7,896.24	8.69	23.277	4.973	26.44	20.25
25.5	75.17	287.77	1,547.73	6,854.92	8.27	23.821	4.429	22.11	16.87
20.4	60.35	234.40	1,495.79	5,724.76	7.73	24.423	3.827	17.75	13.50
17.85	52.96	207.20	1,463.10	5,127.36	7.40	24.746	3.504	15.58	11.83
27 x 6 x 40.8	108.80	361.24	1,557.54	8,283.84	8.67	22.931	5.319	32.00	27.00
35.7	95.57	322.06	1,529.80	7,515.98	8.41	23.337	4.913	28.11	23.62
30.6	82.24	281.32	1,497.03	6,690.00	8.09	23.781	4.469	24.19	20.25
25.5	68.80	238.94	1,456.69	5,798.89	7.68	24.269	3.981	20.23	16.87
20.4	55.25	194.88	1,404.08	4,834.32	7.16	24.807	3.443	16.25	13.50
17.85	48.49	172.38	1,370.78	4,325.65	6.84	25.094	3.156	14.26	11.83
24 x 24 x 40.8	159.80	702.86	1,669.73	12,489.79	9.99	17.770	7.480	47.00	24.00
35.7	140.20	624.54	1,645.80	11,431.56	9.79	18.304	6.946	41.23	21.00
30.6	120.49	543.61	1,618.27	10,274.74	9.51	18.901	6.349	35.44	18.00
25.5	100.67	460.04	1,585.25	9,003.28	9.14	19.571	5.679	29.61	15.00
20.4	80.75	373.76	1,543.13	7,597.30	8.64	20.327	4.923	23.75	12.00
17.85	70.83	329.94	1,516.76	6,842.56	8.32	20.739	4.511	20.83	10.51
24 x 22 x 40.8	153.00	658.35	1,650.57	11,883.44	9.82	18.050	7.200	45.00	24.00
35.7	134.25	585.06	1,626.41	10,864.51	9.61	18.570	6.680	39.48	21.00
30.6	115.39	509.33	1,598.52	9,752.97	9.33	19.149	6.101	33.94	18.00
25.5	96.42	431.09	1,564.95	8,534.21	8.95	19.797	5.453	28.36	15.00
20.4	77.35	350.30	1,521.97	7,190.21	8.44	20.526	4.724	22.75	12.00
17.85	67.85	309.26	1,495.00	6,470.41	8.12	20.922	4.328	19.96	10.51



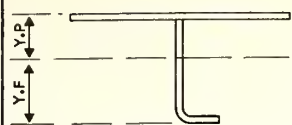
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	613.79	1,629.14	11,257.07	9.64	18.340	6.910	43.00	24.00
35.7	128.30	545.55	1,604.75	10,280.33	9.42	18.844	6.406	37.73	21.00
30.6	110.29	475.02	1,576.50	9,217.04	9.13	19.403	5.847	32.44	18.00
25.5	92.17	402.13	1,542.34	8,053.99	8.75	20.028	5.222	27.11	15.00
20.4	73.95	326.84	1,498.46	6,774.97	8.24	20.729	4.521	21.75	12.00
17.85	64.87	288.58	1,470.87	6,091.54	7.92	21.109	4.141	19.08	10.51
24 x 18 x 40.8	139.40	569.20	1,605.02	10,609.67	9.44	18.640	6.610	41.00	24.00
35.7	122.35	506.02	1,580.41	9,678.24	9.21	19.126	6.124	35.98	21.00
30.6	105.19	440.70	1,551.77	8,666.38	8.91	19.665	5.585	30.94	18.00
25.5	87.92	373.17	1,517.02	7,562.23	8.53	20.265	4.985	25.86	15.00
20.4	70.55	303.37	1,472.21	6,351.33	8.01	20.936	4.314	20.75	12.00
17.85	61.89	267.90	1,443.96	5,705.79	7.70	21.299	3.951	18.20	10.51
24 x 16 x 40.8	132.60	524.56	1,577.66	9,940.17	9.21	18.949	6.301	39.00	24.00
35.7	116.40	466.46	1,552.83	9,057.40	8.98	19.417	5.833	34.23	21.00
30.6	100.09	406.36	1,523.82	8,100.36	8.68	19.934	5.316	29.44	18.00
25.5	83.67	344.19	1,488.46	7,058.50	8.29	20.508	4.742	24.61	15.00
20.4	67.15	279.90	1,442.68	5,919.04	7.78	21.147	4.103	19.75	12.00
17.85	58.92	247.21	1,413.76	5,312.96	7.46	21.492	3.758	17.33	10.51
24 x 14 x 40.8	125.80	479.89	1,546.38	9,247.42	8.96	19.270	5.980	37.00	24.00
35.7	110.45	426.88	1,521.35	8,416.91	8.72	19.717	5.533	32.48	21.00
30.6	94.99	372.00	1,491.97	7,518.33	8.42	20.211	5.039	27.94	18.00
25.5	79.42	315.19	1,456.00	6,542.37	8.03	20.757	4.493	23.36	15.00
20.4	63.75	256.42	1,409.23	5,477.81	7.52	21.363	3.887	18.75	12.00
17.85	55.94	226.51	1,379.62	4,912.85	7.21	21.689	3.561	16.45	10.51
24 x 12 x 40.8	119.00	435.17	1,510.24	8,530.17	8.68	19.602	5.648	35.00	24.00
35.7	104.50	387.26	1,485.05	7,755.84	8.44	20.027	5.223	30.73	21.00
30.6	89.89	337.62	1,455.33	6,919.61	8.13	20.495	4.755	26.44	18.00
25.5	75.17	286.19	1,418.77	6,013.36	7.75	21.012	4.238	22.11	15.00
20.4	60.35	232.93	1,371.03	5,027.39	7.24	21.583	3.667	17.75	12.00
17.85	52.96	205.82	1,340.74	4,505.26	6.93	21.890	3.360	15.58	10.51
24 x 10 x 40.8	112.20	390.42	1,468.04	7,787.11	8.37	19.946	5.304	33.00	24.00
35.7	98.55	347.62	1,442.76	7,073.17	8.13	20.347	4.903	28.98	21.00
30.6	84.79	303.22	1,412.76	6,303.46	7.82	20.788	4.462	24.94	18.00
25.5	70.92	257.18	1,375.64	5,470.99	7.43	21.273	3.977	20.86	15.00
20.4	56.95	209.44	1,326.97	4,567.47	6.94	21.808	3.442	16.75	12.00
17.85	49.98	185.12	1,296.03	4,089.98	6.64	22.094	3.156	14.70	10.51
24 x 8 x 40.8	105.40	345.62	1,418.11	7,016.82	8.02	20.302	4.948	31.00	24.00
35.7	92.60	307.95	1,392.84	6,367.82	7.77	20.678	4.572	27.23	21.00
30.6	79.69	268.81	1,362.66	5,669.11	7.47	21.090	4.160	23.44	18.00
25.5	66.67	228.16	1,325.10	4,914.75	7.09	21.541	3.709	19.61	15.00
20.4	53.55	185.94	1,275.61	4,097.75	6.61	22.038	3.212	15.75	12.00
17.85	47.00	164.41	1,244.09	3,666.78	6.31	22.303	2.947	13.82	10.51
24 x 6 x 40.8	98.60	300.79	1,358.09	6,217.78	7.62	20.672	4.578	29.00	24.00
35.7	86.65	268.25	1,333.03	5,638.65	7.38	21.020	4.230	25.48	21.00
30.6	74.59	234.38	1,302.86	5,015.74	7.08	21.400	3.850	21.94	18.00
25.5	62.42	199.12	1,265.05	4,344.10	6.71	21.816	3.434	18.36	15.00
20.4	50.15	162.44	1,214.97	3,617.92	6.24	22.272	2.978	14.75	12.00
17.85	44.02	143.70	1,183.00	3,235.44	5.96	22.515	2.735	12.95	10.51
21 x 20 x 40.8	136.00	519.63	1,407.45	8,444.15	8.45	16.250	6.000	40.00	21.00
35.7	119.37	462.02	1,386.65	7,710.81	8.25	16.689	5.561	35.11	18.37
30.6	102.64	402.41	1,361.95	6,911.55	7.99	17.175	5.075	30.19	15.75
25.5	85.80	340.76	1,331.34	6,036.76	7.64	17.716	4.534	25.23	13.12
20.4	68.85	277.02	1,291.04	5,074.77	7.18	18.319	3.931	20.25	10.50
17.85	60.40	244.62	1,265.28	4,560.97	6.90	18.645	3.605	17.77	9.20
21 x 18 x 40.8	129.20	480.54	1,385.97	7,939.29	8.27	16.522	5.728	38.00	21.00
35.7	113.42	427.35	1,364.82	7,241.24	8.06	16.944	5.306	33.36	18.37
30.6	97.54	372.30	1,339.62	6,482.16	7.79	17.411	4.839	28.69	15.75



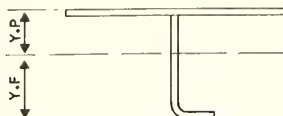
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

50t

STEEL

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	315.33	1,308.29	5,653.49	7.44	17.929	4.321	23.98	13.12
20.4	65.45	256.41	1,266.93	4,744.89	6.98	18.505	3.745	19.25	10.50
17.85	57.43	226.45	1,240.47	4,260.79	6.70	18.815	3.435	16.89	9.20
21 x 16 x 40.8	122.40	441.41	1,361.48	7,416.74	8.06	16.802	5.448	36.00	21.00
35.7	107.47	392.66	1,339.97	6,756.69	7.85	17.208	5.042	31.61	18.37
30.6	92.44	342.17	1,314.26	6,040.54	7.57	17.654	4.596	27.19	15.75
25.5	77.30	289.89	1,282.18	5,260.73	7.22	18.147	4.103	22.73	13.12
20.4	62.05	235.80	1,239.72	4,408.18	6.76	18.694	3.556	18.25	10.50
17.85	54.45	208.29	1,212.54	3,955.02	6.48	18.988	3.262	16.01	9.20
21 x 14 x 40.8	115.60	402.24	1,333.30	6,875.55	7.83	17.093	5.157	34.00	21.00
35.7	101.52	357.93	1,311.45	6,256.44	7.61	17.479	4.771	29.86	18.37
30.6	87.34	312.02	1,285.21	5,586.17	7.34	17.904	4.346	25.69	15.75
25.5	73.05	264.45	1,252.36	4,858.11	6.98	18.371	3.879	21.48	13.12
20.4	58.65	215.19	1,208.78	4,064.40	6.53	18.888	3.362	17.25	10.50
17.85	51.47	190.12	1,180.86	3,643.51	6.25	19.165	3.085	15.14	9.20
21 x 12 x 40.8	108.80	363.03	1,300.55	6,314.71	7.57	17.395	4.855	32.00	21.00
35.7	95.57	323.18	1,278.36	5,739.71	7.35	17.760	4.490	28.11	18.37
30.6	82.24	281.85	1,251.61	5,118.47	7.07	18.160	4.090	24.19	15.75
25.5	68.80	238.99	1,217.99	4,445.26	6.72	18.600	3.650	20.23	13.12
20.4	55.25	194.57	1,173.29	3,713.34	6.27	19.085	3.165	16.25	10.50
17.85	48.49	171.94	1,144.62	3,326.09	6.00	19.344	2.906	14.26	9.20
21 x 10 x 40.8	102.00	323.78	1,261.99	5,733.13	7.28	17.707	4.543	30.00	21.00
35.7	89.62	288.40	1,239.52	5,205.68	7.06	18.050	4.200	26.36	18.37
30.6	77.14	251.66	1,212.29	4,636.85	6.78	18.425	3.825	22.69	15.75
25.5	64.55	213.52	1,177.94	4,021.78	6.44	18.836	3.414	18.98	13.12
20.4	51.85	173.94	1,132.14	3,354.76	5.99	19.287	2.963	15.25	10.50
17.85	45.51	153.76	1,102.77	3,002.59	5.73	19.527	2.723	13.39	9.20
21 x 8 x 40.8	95.20	284.48	1,215.95	5,129.64	6.95	18.031	4.219	28.00	21.00
35.7	83.67	253.59	1,193.27	4,653.45	6.73	18.350	3.900	24.61	18.37
30.6	72.04	221.45	1,165.65	4,140.69	6.46	18.698	3.552	21.19	15.75
25.5	60.30	188.04	1,130.66	3,587.26	6.12	19.077	3.173	17.73	13.12
20.4	48.45	153.31	1,083.90	2,988.41	5.69	19.493	2.757	14.25	10.50
17.85	42.53	135.58	1,053.90	2,672.84	5.43	19.714	2.536	12.51	9.20
21 x 6 x 40.8	88.40	245.15	1,159.99	4,502.97	6.58	18.368	3.882	26.00	21.00
35.7	77.72	218.75	1,137.29	4,082.09	6.36	18.661	3.589	22.86	18.37
30.6	66.94	191.23	1,109.45	3,629.31	6.09	18.979	3.271	19.69	15.75
25.5	56.05	162.55	1,074.01	3,141.26	5.76	19.325	2.925	16.48	13.12
20.4	45.05	132.67	1,026.52	2,614.05	5.35	19.703	2.547	13.25	10.50
17.85	39.56	117.40	996.06	2,336.65	5.10	19.904	2.346	11.63	9.20
18 x 18 x 40.8	119.00	396.50	1,167.84	5,698.05	7.10	14.371	4.879	35.00	18.00
35.7	104.50	352.84	1,149.77	5,197.28	6.91	14.730	4.520	30.73	15.75
30.6	89.89	307.57	1,127.67	4,651.93	6.67	15.125	4.125	26.44	13.50
25.5	75.17	260.65	1,099.51	4,056.05	6.36	15.561	3.689	22.11	11.25
20.4	60.35	212.07	1,061.52	3,402.55	5.96	16.045	3.205	17.75	9.00
15.3	45.42	161.79	1,005.90	2,682.87	5.42	16.583	2.667	13.36	6.75
18 x 16 x 40.8	112.20	362.93	1,146.16	5,306.15	6.91	14.621	4.629	33.00	18.00
35.7	98.55	323.05	1,127.62	4,833.86	6.72	14.963	4.287	28.98	15.75
30.6	84.79	281.68	1,104.90	4,320.78	6.47	15.339	3.911	24.94	13.50
25.5	70.92	238.78	1,075.88	3,761.69	6.16	15.754	3.496	20.86	11.25
20.4	56.95	194.34	1,036.71	3,150.43	5.76	16.211	3.039	16.75	9.00
15.3	42.87	148.31	979.45	2,479.58	5.23	16.718	2.532	12.61	6.75
18 x 14 x 40.8	105.40	329.31	1,121.08	4,899.90	6.70	14.879	4.371	31.00	18.00
35.7	92.60	293.23	1,102.06	4,458.37	6.51	15.204	4.046	27.23	15.75
30.6	79.69	255.77	1,078.68	3,979.84	6.26	15.560	3.690	23.44	13.50
25.5	66.67	216.90	1,048.78	3,459.81	5.95	15.951	3.299	19.61	11.25
20.4	53.55	176.60	1,008.40	2,892.93	5.55	16.381	2.869	15.75	9.00
15.3	40.32	134.84	949.49	2,272.92	5.03	16.856	2.394	11.86	6.75

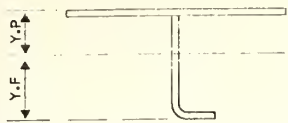


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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51.0 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	295.65	1,091.72	4,478.49	6.47	15.148	4.102	29.00	18.00
35.7	86.65	263.38	1,072.21	4,070.20	6.27	15.454	3.796	25.48	15.75
30.6	74.59	229.84	1,048.17	3,628.69	6.02	15.788	3.462	21.94	13.50
25.5	62.42	195.01	1,017.38	3,150.10	5.71	16.154	3.096	18.36	11.25
20.4	50.15	158.86	975.79	2,629.90	5.32	16.555	2.695	14.75	9.00
15.3	37.77	121.37	915.27	2,062.77	4.81	16.996	2.254	11.11	6.75
18 x 10 x 40.8	91.80	261.96	1,056.88	4,041.04	6.20	15.426	3.824	27.00	18.00
35.7	80.70	233.50	1,036.91	3,668.70	6.00	15.712	3.538	23.73	15.75
30.6	69.49	203.89	1,012.24	3,266.85	5.76	16.023	3.227	20.44	13.50
25.5	58.17	173.10	980.57	2,832.26	5.45	16.362	2.888	17.11	11.25
20.4	46.75	141.11	937.82	2,361.14	5.07	16.732	2.518	13.75	9.00
15.3	35.22	107.89	875.81	1,849.07	4.57	17.139	2.111	10.36	6.75
18 x 8 x 40.8	85.00	228.22	1,014.87	3,586.64	5.90	15.716	3.534	25.00	18.00
35.7	74.75	203.59	994.52	3,253.16	5.70	15.979	3.271	21.98	15.75
30.6	64.39	177.92	969.29	2,893.84	5.46	16.264	2.986	18.94	13.50
25.5	53.92	151.19	936.84	2,505.97	5.16	16.575	2.675	15.86	11.25
20.4	43.35	123.36	893.06	2,086.46	4.79	16.914	2.336	12.75	9.00
15.3	32.67	94.41	829.82	1,631.71	4.31	17.284	1.966	9.61	6.75
18 x 6 x 40.8	78.20	194.44	963.23	3,114.27	5.55	16.017	3.233	23.00	18.00
35.7	68.80	173.66	942.65	2,822.84	5.36	16.255	2.995	20.23	15.75
30.6	59.29	151.94	917.03	2,509.11	5.12	16.514	2.736	17.44	13.50
25.5	49.67	129.26	884.02	2,170.88	4.84	16.794	2.456	14.61	11.25
20.4	39.95	105.60	839.49	1,805.67	4.48	17.099	2.151	11.75	9.00
15.3	30.12	80.92	775.51	1,410.60	4.03	17.431	1.819	8.86	6.75



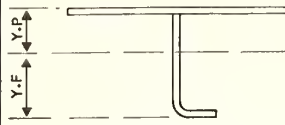
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

56.1 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS. FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,107.17	2,566.50	24,268.34	12.57	21.919	9.456	59.00	30.00
35.7	175.90	982.11	2,529.58	22,196.10	12.32	22.600	8.775	51.73	26.25
30.6	151.09	853.43	2,487.87	19,937.23	11.98	23.361	8.014	44.44	22.50
25.5	126.17	721.05	2,438.80	17,460.62	11.52	24.215	7.160	37.11	18.75
20.4	101.15	584.88	2,377.50	14,727.53	10.89	25.180	6.195	29.75	15.00
17.85	88.70	515.90	2,339.68	13,262.15	10.49	25.707	5.668	26.09	13.14
30 x 27 x 40.8	190.40	1,023.19	2,532.36	22,864.31	12.33	22.346	9.029	56.00	30.00
35.7	166.97	907.74	2,495.12	20,882.98	12.06	23.005	8.370	49.11	26.25
30.6	143.44	788.92	2,452.88	18,728.73	11.71	23.740	7.635	42.19	22.50
25.5	119.80	666.66	2,402.95	16,373.79	11.23	24.561	6.814	35.23	18.75
20.4	96.05	540.86	2,340.25	13,783.81	10.60	25.485	5.890	28.25	15.00
17.85	84.23	477.12	2,301.43	12,399.13	10.20	25.987	5.388	24.77	13.14
30 x 24 x 40.8	180.20	939.13	2,493.23	21,403.18	12.05	22.790	8.585	53.00	30.00
35.7	158.05	833.32	2,455.68	19,520.97	11.77	23.426	7.949	46.48	26.25
30.6	135.79	724.38	2,412.88	17,479.79	11.40	24.131	7.244	39.94	22.50
25.5	113.42	612.25	2,362.04	15,255.08	10.92	24.917	6.458	33.36	18.75
20.4	90.95	496.83	2,297.85	12,816.75	10.28	25.797	5.578	26.75	15.00
17.85	79.76	438.33	2,257.97	11,516.88	9.88	26.274	5.101	23.46	13.14
30 x 21 x 40.8	170.00	854.99	2,447.92	19,881.39	11.73	23.253	8.122	50.00	30.00
35.7	149.12	758.84	2,410.07	18,107.29	11.44	23.862	7.513	43.86	26.25
30.6	128.14	659.81	2,366.71	16,188.33	11.07	24.535	6.840	37.69	22.50
25.5	107.05	557.81	2,314.91	14,103.08	10.58	25.283	6.092	31.48	18.75
20.4	85.85	452.78	2,249.17	11,825.46	9.94	26.117	5.258	25.25	15.00
17.85	75.30	399.53	2,208.17	10,614.75	9.54	26.568	4.807	22.15	13.14
30 x 18 x 40.8	159.80	770.79	2,394.85	18,295.08	11.37	23.736	7.639	47.00	30.00
35.7	140.20	684.31	2,356.73	16,638.93	11.07	24.315	7.060	41.23	26.25
30.6	120.49	595.20	2,312.82	14,852.15	10.69	24.953	6.422	35.44	22.50
25.5	100.67	503.36	2,260.05	12,916.27	10.20	25.660	5.715	29.61	18.75
20.4	80.75	408.73	2,192.69	10,809.02	9.56	26.445	4.930	23.75	15.00
17.85	70.83	360.73	2,150.53	9,692.07	9.17	26.868	4.507	20.83	13.14
30 x 15 x 40.8	149.60	686.50	2,331.83	16,640.06	10.96	24.239	7.136	44.00	30.00
35.7	131.27	609.73	2,293.52	15,112.67	10.66	24.786	6.589	38.61	26.25
30.6	112.84	530.55	2,249.10	13,468.88	10.27	25.386	5.989	33.19	22.50
25.5	94.30	448.89	2,195.38	11,693.06	9.78	26.049	5.326	27.73	18.75
20.4	75.65	364.67	2,126.37	9,766.46	9.15	26.782	4.593	22.25	15.00
17.85	66.36	321.91	2,083.03	8,748.12	8.76	27.175	4.200	19.52	13.14
30 x 12 x 40.8	139.40	602.14	2,255.78	14,911.77	10.49	24.765	6.610	41.00	30.00
35.7	122.35	535.10	2,217.40	13,525.00	10.18	25.276	6.099	35.98	26.25
30.6	105.19	465.88	2,172.59	12,035.99	9.80	25.835	5.540	30.94	22.50
25.5	87.92	394.40	2,117.99	10,431.73	9.31	26.450	4.925	25.86	18.75
20.4	70.55	320.59	2,047.41	8,696.77	8.69	27.127	4.248	20.75	15.00
17.85	61.89	283.09	2,002.91	7,782.16	8.31	27.490	3.885	18.20	13.14
30 x 9 x 40.8	129.20	517.71	2,162.19	13,105.23	9.95	25.314	6.061	38.00	30.00
35.7	113.42	460.42	2,123.99	11,872.15	9.64	25.785	5.590	33.36	26.25
30.6	97.54	401.17	2,079.00	10,550.76	9.25	26.300	5.075	28.69	22.50
25.5	81.55	339.89	2,023.75	9,130.49	8.78	26.863	4.512	23.98	18.75
20.4	65.45	276.51	1,951.79	7,598.86	8.17	27.482	3.893	19.25	15.00
17.85	57.43	244.27	1,906.26	6,793.41	7.81	27.811	3.564	16.89	13.14
30 x 6 x 40.8	119.00	433.20	2,044.20	11,214.99	9.31	25.889	5.486	35.00	30.00
35.7	104.50	385.69	2,006.64	10,150.02	9.00	26.317	5.058	30.73	26.25
30.6	89.89	336.43	1,961.92	9,010.27	8.63	26.782	4.593	26.44	22.50
25.5	75.17	285.35	1,906.46	7,787.40	8.17	27.290	4.085	22.11	18.75
20.4	60.35	232.41	1,833.65	6,471.62	7.59	27.846	3.529	17.75	15.00
17.85	52.96	205.43	1,787.38	5,781.05	7.25	28.141	3.234	15.58	13.14
27 x 27 x 40.8	180.20	899.12	2,259.92	18,251.23	11.12	20.299	8.076	53.00	27.00
35.7	158.05	797.76	2,227.41	16,667.00	10.87	20.892	7.483	46.48	23.62
30.6	135.79	693.38	2,189.84	14,943.22	10.54	21.551	6.824	39.94	20.25



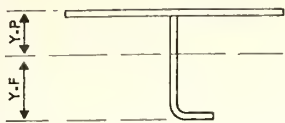
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	585.94	2,144.54	13,058.26	10.11	22.286	6.089	33.36	16.87
20.4	90.95	475.37	2,086.40	10,985.61	9.52	23.110	5.265	26.75	13.50
17.85	79.76	419.34	2,049.85	9,878.09	9.15	23.556	4.819	23.46	11.83
27 x 24 x 40.8	170.00	823.30	2,224.47	17,050.57	10.86	20.710	7.665	50.00	27.00
35.7	149.12	730.61	2,191.48	15,547.70	10.60	21.280	7.095	43.86	23.62
30.6	128.14	635.14	2,153.19	13,916.98	10.26	21.912	6.463	37.69	20.25
25.5	107.05	536.84	2,106.79	12,139.42	9.82	22.613	5.762	31.48	16.87
20.4	85.85	435.63	2,046.98	10,191.92	9.23	23.396	4.979	25.25	13.50
17.85	75.30	384.33	2,009.28	9,154.37	8.86	23.819	4.556	22.15	11.83
27 x 21 x 40.8	159.80	747.41	2,183.23	15,799.01	10.57	21.138	7.237	47.00	27.00
35.7	140.20	663.41	2,149.75	14,385.11	10.29	21.683	6.692	41.23	23.62
30.6	120.49	576.87	2,110.70	12,855.20	9.95	22.284	6.091	35.44	20.25
25.5	100.67	487.71	2,063.13	11,192.82	9.50	22.950	5.425	29.61	16.87
20.4	80.75	395.87	2,001.56	9,378.09	8.91	23.690	4.685	23.75	13.50
17.85	70.83	349.31	1,962.65	8,414.17	8.54	24.088	4.287	20.83	11.83
27 x 18 x 40.8	149.60	671.43	2,134.66	14,493.24	10.23	21.586	6.789	44.00	27.00
35.7	131.27	596.16	2,100.69	13,176.67	9.95	22.102	6.273	38.61	23.62
30.6	112.84	518.56	2,060.85	11,756.00	9.60	22.671	5.704	33.19	20.25
25.5	94.30	438.56	2,012.08	10,217.18	9.14	23.297	5.078	27.73	16.87
20.4	75.65	356.11	1,948.65	8,543.34	8.55	23.991	4.384	22.25	13.50
17.85	66.36	314.29	1,908.46	7,656.91	8.19	24.363	4.012	19.52	11.83
27 x 15 x 40.8	139.40	595.39	2,076.61	13,129.66	9.84	22.052	6.323	41.00	27.00
35.7	122.35	528.86	2,042.19	11,919.62	9.56	22.538	5.837	35.98	23.62
30.6	105.19	460.21	2,001.57	10,617.38	9.20	23.070	5.305	30.94	20.25
25.5	87.92	389.39	1,951.58	9,211.14	8.75	23.655	4.720	25.86	16.87
20.4	70.55	316.34	1,886.24	7,686.87	8.17	24.300	4.075	20.75	13.50
17.85	61.89	279.25	1,844.74	6,881.99	7.81	24.644	3.731	18.20	11.83
27 x 12 x 40.8	129.20	519.26	2,006.00	11,704.35	9.40	22.540	5.835	38.00	27.00
35.7	113.42	461.51	1,971.21	10,610.96	9.11	22.992	5.383	33.36	23.62
30.6	97.54	401.84	1,929.90	9,437.16	8.75	23.485	4.890	28.69	20.25
25.5	81.55	340.20	1,878.71	8,173.26	8.31	24.025	4.350	23.98	16.87
20.4	65.45	276.55	1,811.50	6,807.82	7.74	24.617	3.758	19.25	13.50
17.85	57.43	244.21	1,768.73	6,088.79	7.39	24.933	3.442	16.89	11.83
27 x 9 x 40.8	119.00	443.06	1,918.27	10,213.01	8.88	23.051	5.324	35.00	27.00
35.7	104.50	394.10	1,883.32	9,247.44	8.59	23.465	4.910	30.73	23.62
30.6	89.89	343.43	1,841.48	8,213.04	8.24	23.915	4.460	26.44	20.25
25.5	75.17	291.00	1,789.29	7,102.01	7.80	24.406	3.969	22.11	16.87
20.4	60.35	236.76	1,720.40	5,905.26	7.25	24.943	3.432	17.75	13.50
17.85	52.96	209.16	1,676.48	5,276.65	6.92	25.228	3.147	15.58	11.83
27 x 6 x 40.8	108.80	366.79	1,806.32	8,650.95	8.27	23.586	4.789	32.00	27.00
35.7	95.57	326.64	1,771.61	7,825.55	7.99	23.958	4.417	28.11	23.62
30.6	82.24	284.98	1,729.67	6,942.50	7.65	24.361	4.014	24.19	20.25
25.5	68.80	241.77	1,676.92	5,995.74	7.23	24.800	3.575	20.23	16.87
20.4	55.25	196.95	1,606.90	4,978.27	6.70	25.277	3.098	16.25	13.50
17.85	48.49	174.11	1,562.18	4,444.89	6.39	25.530	2.845	14.26	11.83
24 x 24 x 40.8	159.80	712.00	1,956.65	13,246.70	9.68	18.605	6.770	47.00	24.00
35.7	140.20	631.99	1,927.80	12,077.36	9.43	19.110	6.265	41.23	21.00
30.6	120.49	549.51	1,893.61	10,807.59	9.12	19.668	5.707	35.44	18.00
25.5	100.67	464.53	1,851.31	9,423.05	8.71	20.285	5.090	29.61	15.00
20.4	80.75	377.00	1,795.64	7,906.48	8.18	20.972	4.403	23.75	12.00
17.85	70.83	332.63	1,760.08	7,098.94	7.85	21.342	4.033	20.83	10.51
24 x 22 x 40.8	153.00	666.94	1,932.49	12,581.55	9.50	18.864	6.511	45.00	24.00
35.7	134.25	592.08	1,903.20	11,459.11	9.25	19.354	6.021	39.48	21.00
30.6	115.39	514.89	1,868.40	10,242.69	8.93	19.893	5.482	33.94	18.00
25.5	96.42	435.34	1,825.20	8,919.31	8.52	20.488	4.887	28.36	15.00
20.4	77.35	353.38	1,768.26	7,473.40	7.98	21.149	4.226	22.75	12.00
17.85	67.85	311.82	1,731.85	6,705.09	7.65	21.503	3.872	19.96	10.51



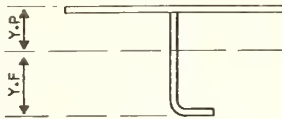
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	621.85	1,905.54	11,897.07	9.30	19.132	6.243	43.00	24.00
35.7	128.30	552.15	1,875.80	10,824.50	9.05	19.604	5.771	37.73	21.00
30.6	110.29	480.25	1,840.34	9,664.44	8.73	20.124	5.251	32.44	18.00
25.5	92.17	406.13	1,796.23	8,405.21	8.31	20.696	4.679	27.11	15.00
20.4	73.95	329.74	1,737.95	7,032.87	7.78	21.328	4.047	21.75	12.00
17.85	64.87	291.00	1,700.66	6,305.16	7.45	21.668	3.707	19.08	10.51
24 x 18 x 40.8	139.40	576.73	1,875.27	11,192.38	9.09	19.407	5.968	41.00	24.00
35.7	122.35	512.19	1,845.07	10,172.87	8.83	19.861	5.514	35.98	21.00
30.6	105.19	445.60	1,808.95	9,072.37	8.50	20.360	5.015	30.94	18.00
25.5	87.92	376.92	1,763.88	7,880.44	8.09	20.907	4.468	25.86	15.00
20.4	70.55	306.10	1,704.23	6,584.70	7.56	21.511	3.864	20.75	12.00
17.85	61.89	270.17	1,666.03	5,899.02	7.23	21.834	3.541	18.20	10.51
24 x 16 x 40.8	132.60	531.57	1,841.04	10,466.59	8.85	19.690	5.685	39.00	24.00
35.7	116.40	472.21	1,810.36	9,503.53	8.59	20.125	5.250	34.23	21.00
30.6	100.09	410.94	1,773.57	8,465.96	8.26	20.602	4.773	29.44	18.00
25.5	83.67	347.70	1,727.53	7,344.65	7.85	21.123	4.252	24.61	15.00
20.4	67.15	282.46	1,666.47	6,128.68	7.32	21.697	3.678	19.75	12.00
17.85	58.92	249.35	1,627.35	5,486.52	7.00	22.004	3.371	17.33	10.51
24 x 14 x 40.8	125.80	486.38	1,802.00	9,718.72	8.60	19.982	5.393	37.00	24.00
35.7	110.45	432.21	1,770.87	8,815.74	8.33	20.397	4.978	32.48	21.00
30.6	94.99	376.26	1,733.40	7,844.70	8.00	20.849	4.526	27.94	18.00
25.5	79.42	318.47	1,686.38	6,797.50	7.59	21.344	4.031	23.36	15.00
20.4	63.75	258.81	1,623.90	5,664.61	7.07	21.887	3.488	18.75	12.00
17.85	55.94	228.52	1,583.86	5,067.51	6.76	22.176	3.199	16.45	10.51
24 x 12 x 40.8	119.00	441.15	1,757.07	8,947.76	8.31	20.283	5.092	35.00	24.00
35.7	104.50	392.19	1,725.53	8,108.73	8.05	20.676	4.699	30.73	21.00
30.6	89.89	341.56	1,687.41	7,208.03	7.72	21.103	4.272	26.44	18.00
25.5	75.17	289.23	1,639.42	6,238.62	7.31	21.570	3.805	22.11	15.00
20.4	60.35	235.16	1,575.56	5,192.27	6.80	22.079	3.296	17.75	12.00
17.85	52.96	207.69	1,534.63	4,641.82	6.49	22.350	3.025	15.58	10.51
24 x 10 x 40.8	112.20	395.89	1,704.82	8,152.61	8.00	20.593	4.782	33.00	24.00
35.7	98.55	352.14	1,672.92	7,381.68	7.73	20.963	4.412	28.98	21.00
30.6	84.79	306.85	1,634.21	6,555.37	7.41	21.364	4.011	24.94	18.00
25.5	70.92	259.98	1,585.33	5,667.62	7.01	21.800	3.575	20.86	15.00
20.4	56.95	211.51	1,520.16	4,711.44	6.51	22.276	3.099	16.75	12.00
17.85	49.98	186.85	1,478.41	4,209.30	6.21	22.528	2.847	14.70	10.51
24 x 8 x 40.8	105.40	350.60	1,643.27	7,332.13	7.64	20.913	4.462	31.00	24.00
35.7	92.60	312.06	1,611.15	6,633.74	7.38	21.258	4.117	27.23	21.00
30.6	79.69	272.12	1,571.98	5,886.11	7.06	21.631	3.744	23.44	18.00
25.5	66.67	230.73	1,522.35	5,084.12	6.67	22.035	3.340	19.61	15.00
20.4	53.55	187.84	1,456.06	4,221.89	6.19	22.475	2.900	15.75	12.00
17.85	47.00	166.01	1,413.61	3,769.79	5.90	22.708	2.667	13.82	10.51
24 x 6 x 40.8	98.60	305.27	1,569.73	6,485.08	7.25	21.244	4.131	29.00	24.00
35.7	86.65	271.97	1,537.59	5,863.98	6.99	21.561	3.814	25.48	21.00
30.6	74.59	237.38	1,498.20	5,199.61	6.68	21.904	3.471	21.94	18.00
25.5	62.42	201.46	1,448.08	4,487.70	6.31	22.276	3.099	18.36	15.00
20.4	50.15	164.18	1,381.03	3,723.37	5.84	22.679	2.696	14.75	12.00
17.85	44.02	145.17	1,338.12	3,323.12	5.56	22.892	2.483	12.95	10.51
21 x 20 x 40.8	136.00	526.30	1,643.86	8,920.16	8.14	16.949	5.426	40.00	21.00
35.7	119.37	467.50	1,617.65	8,115.09	7.91	17.358	5.017	35.11	18.37
30.6	102.64	406.79	1,585.74	7,243.66	7.62	17.807	4.568	30.19	15.75
25.5	85.80	344.13	1,545.25	6,297.45	7.25	18.300	4.075	25.23	13.12
20.4	68.85	279.50	1,490.83	5,266.43	6.77	18.842	3.533	20.25	10.50
17.85	60.40	246.70	1,455.67	4,719.99	6.48	19.133	3.242	17.77	9.20
21 x 18 x 40.8	129.20	486.76	1,616.57	8,370.71	7.95	17.197	5.178	38.00	21.00
35.7	113.42	432.47	1,589.77	7,607.06	7.71	17.590	4.785	33.36	18.37
30.6	97.54	376.39	1,557.08	6,782.23	7.42	18.019	4.356	28.69	15.75



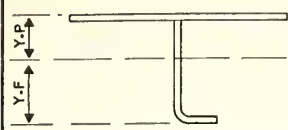
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	318.49	1,515.52	5,888.72	7.05	18.489	3.886	23.98	13.12
20.4	65.45	258.75	1,459.65	4,917.69	6.58	19.006	3.369	19.25	10.50
17.85	57.43	228.42	1,423.57	4,404.15	6.29	19.281	3.094	16.89	9.20
21 x 16 x 40.8	122.40	447.17	1,585.56	7,804.42	7.73	17.453	4.922	36.00	21.00
35.7	107.47	397.41	1,558.16	7,084.94	7.50	17.828	4.547	31.61	18.37
30.6	92.44	345.97	1,524.66	6,309.43	7.20	18.237	4.138	27.19	15.75
25.5	77.30	292.84	1,482.01	5,471.27	6.83	18.683	3.692	22.73	13.12
20.4	62.05	237.99	1,424.64	4,562.77	6.36	19.172	3.203	18.25	10.50
17.85	54.45	210.13	1,387.63	4,083.30	6.08	19.432	2.943	16.01	9.20
21 x 14 x 40.8	115.60	407.55	1,550.03	7,220.51	7.50	17.717	4.658	34.00	21.00
35.7	101.52	362.32	1,522.02	6,548.13	7.26	18.073	4.302	29.86	18.37
30.6	87.34	315.54	1,487.70	5,824.82	6.96	18.460	3.915	25.69	15.75
25.5	73.05	267.19	1,443.94	5,044.83	6.60	18.881	3.494	21.48	13.12
20.4	58.65	217.23	1,385.07	4,201.49	6.13	19.342	3.033	17.25	10.50
17.85	51.47	191.84	1,347.13	3,757.33	5.85	19.586	2.789	15.14	9.20
21 x 12 x 40.8	108.80	367.90	1,508.88	6,618.14	7.23	17.989	4.386	32.00	21.00
35.7	95.57	327.21	1,480.29	5,996.00	6.99	18.324	4.051	28.11	18.37
30.6	82.24	285.10	1,445.16	5,327.96	6.70	18.688	3.687	24.19	15.75
25.5	68.80	241.52	1,400.30	4,609.10	6.34	19.084	3.291	20.23	13.12
20.4	55.25	196.46	1,339.97	3,833.69	5.88	19.514	2.861	16.25	10.50
17.85	48.49	173.54	1,301.15	3,426.10	5.61	19.742	2.633	14.26	9.20
21 x 10 x 40.8	102.00	328.21	1,460.70	5,996.43	6.94	18.270	4.105	30.00	21.00
35.7	89.62	292.08	1,431.57	5,427.88	6.70	18.583	3.792	26.36	18.37
30.6	77.14	254.64	1,395.68	4,818.39	6.41	18.923	3.452	22.69	15.75
25.5	64.55	215.85	1,349.80	4,163.77	6.06	19.290	3.085	18.98	13.12
20.4	51.85	175.69	1,288.10	3,459.19	5.61	19.689	2.686	15.25	10.50
17.85	45.51	155.25	1,248.47	3,089.49	5.35	19.900	2.475	13.39	9.20
21 x 8 x 40.8	95.20	288.49	1,403.50	5,354.42	6.61	18.560	3.815	28.00	21.00
35.7	83.67	256.93	1,373.94	4,843.07	6.38	18.850	3.525	24.61	18.37
30.6	72.04	224.16	1,337.42	4,295.61	6.09	19.163	3.212	21.19	15.75
25.5	60.30	190.16	1,290.65	3,708.52	5.75	19.502	2.873	17.73	13.12
20.4	48.45	154.91	1,227.80	3,077.80	5.32	19.868	2.507	14.25	10.50
17.85	42.53	136.95	1,187.54	2,747.38	5.07	20.061	2.314	12.51	9.20
21 x 6 x 40.8	88.40	248.74	1,334.48	4,691.10	6.24	18.860	3.515	26.00	21.00
35.7	77.72	221.75	1,304.71	4,240.82	6.01	19.125	3.250	22.86	18.37
30.6	66.94	193.67	1,267.80	3,759.09	5.74	19.410	2.965	19.69	15.75
25.5	56.05	164.47	1,220.44	3,243.02	5.41	19.718	2.657	16.48	13.12
20.4	45.05	134.13	1,156.86	2,689.33	5.00	20.050	2.325	13.25	10.50
17.85	39.56	118.64	1,116.24	2,399.61	4.75	20.225	2.150	11.63	9.20
18 x 18 x 40.8	119.00	401.60	1,358.56	6,005.64	6.81	14.954	4.421	35.00	18.00
35.7	104.50	357.06	1,334.88	5,458.06	6.60	15.286	4.089	30.73	15.75
30.6	89.89	310.97	1,305.42	4,865.93	6.34	15.648	3.727	26.44	13.50
25.5	75.17	263.31	1,267.34	4,224.09	6.02	16.042	3.333	22.11	11.25
20.4	60.35	214.07	1,215.48	3,526.48	5.61	16.474	2.901	17.75	9.00
15.3	45.42	163.21	1,139.53	2,766.01	5.06	16.948	2.427	13.36	6.75
18 x 16 x 40.8	112.20	367.63	1,330.77	5,581.06	6.62	15.181	4.194	33.00	18.00
35.7	98.55	326.95	1,306.38	5,066.63	6.41	15.497	3.878	28.98	15.75
30.6	84.79	284.83	1,276.02	4,511.59	6.15	15.839	3.536	24.94	13.50
25.5	70.92	241.26	1,236.77	3,911.43	5.82	16.212	3.163	20.86	11.25
20.4	56.95	196.21	1,183.42	3,260.88	5.41	16.620	2.755	16.75	9.00
15.3	42.87	149.65	1,105.57	2,553.85	4.88	17.065	2.310	12.61	6.75
18 x 14 x 40.8	105.40	333.63	1,298.75	5,142.95	6.40	15.415	3.960	31.00	18.00
35.7	92.60	296.82	1,273.65	4,663.95	6.19	15.713	3.662	27.23	15.75
30.6	79.69	258.68	1,242.37	4,148.24	5.93	16.036	3.339	23.44	13.50
25.5	66.67	219.20	1,201.94	3,591.91	5.61	16.387	2.988	19.61	11.25
20.4	53.55	178.34	1,147.09	2,990.47	5.21	16.768	2.607	15.75	9.00
15.3	40.32	136.10	1,067.43	2,338.69	4.69	17.184	2.191	11.86	6.75



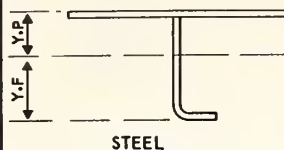
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	299.60	1,261.48	4,690.66	6.16	15.657	3.718	29.00	18.00
35.7	86.65	266.66	1,235.66	4,249.53	5.95	15.936	3.439	25.48	15.75
30.6	74.59	232.52	1,203.46	3,775.53	5.69	16.238	3.137	21.94	13.50
25.5	62.42	197.13	1,161.87	3,265.33	5.38	16.565	2.810	18.36	11.25
20.4	50.15	160.48	1,105.59	2,715.11	4.99	16.919	2.456	14.75	9.00
15.3	37.77	122.54	1,024.26	2,120.49	4.48	17.305	2.070	11.11	6.75
18 x 10 x 40.8	91.80	265.53	1,217.54	4,223.48	5.90	15.906	3.469	27.00	18.00
35.7	80.70	236.48	1,191.03	3,822.85	5.69	16.165	3.210	23.73	15.75
30.6	69.49	206.33	1,157.97	3,393.09	5.43	16.445	2.930	20.44	13.50
25.5	58.17	175.05	1,115.30	2,931.42	5.12	16.747	2.628	17.11	11.25
20.4	46.75	142.60	1,057.71	2,434.66	4.74	17.073	2.302	13.75	9.00
15.3	35.22	108.98	975.01	1,899.16	4.26	17.427	1.948	10.36	6.75
18 x 8 x 40.8	85.00	231.42	1,164.94	3,740.68	5.59	16.164	3.211	25.00	18.00
35.7	74.75	206.28	1,137.87	3,383.35	5.39	16.402	2.973	21.98	15.75
30.6	64.39	180.13	1,104.07	3,000.54	5.14	16.657	2.718	18.94	13.50
25.5	53.92	152.96	1,060.49	2,589.96	4.84	16.933	2.442	15.86	11.25
20.4	43.35	124.72	1,001.87	2,148.98	4.48	17.230	2.145	12.75	9.00
15.3	32.67	95.41	918.29	1,674.64	4.01	17.551	1.824	9.61	6.75
18 x 6 x 40.8	78.20	197.28	1,100.88	3,241.44	5.25	16.431	2.944	23.00	18.00
35.7	68.80	176.05	1,073.46	2,930.44	5.05	16.645	2.730	20.23	15.75
30.6	59.29	153.92	1,039.19	2,597.48	4.82	16.875	2.500	17.44	13.50
25.5	49.67	130.86	995.05	2,240.67	4.53	17.123	2.252	14.61	11.25
20.4	39.95	106.84	935.91	1,857.92	4.18	17.390	1.985	11.75	9.00
15.3	30.12	81.85	852.28	1,446.86	3.74	17.677	1.698	8.86	6.75



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,119.89	2,972.75	25,623.72	12.22	22.880	8.620	59.00	30.00
35.7	175.90	992.45	2,929.80	23,351.91	11.92	23.530	7.970	51.73	26.25
30.6	151.09	861.58	2,879.92	20,890.10	11.54	24.246	7.254	44.44	22.50
25.5	126.17	727.21	2,819.43	18,210.25	11.03	25.041	6.459	37.11	18.75
20.4	101.15	589.29	2,741.35	15,278.29	10.36	25.927	5.573	29.75	15.00
17.85	88.70	519.53	2,692.06	13,717.95	9.95	26.404	5.096	26.09	13.14
30 x 27 x 40.8	190.40	1,035.02	2,930.77	24,094.06	11.96	23.279	8.221	56.00	30.00
35.7	166.97	917.36	2,887.18	21,929.24	11.65	23.905	7.595	49.11	26.25
30.6	143.44	796.52	2,836.35	19,589.21	11.25	24.594	6.906	42.19	22.50
25.5	119.80	672.41	2,774.47	17,049.06	10.74	25.355	6.145	35.23	18.75
20.4	96.05	544.98	2,694.30	14,278.77	10.07	26.200	5.300	28.25	15.00
17.85	84.23	480.52	2,643.58	12,808.34	9.66	26.655	4.845	24.77	13.14
30 x 24 x 40.8	180.20	950.07	2,882.75	22,508.95	11.66	23.692	7.808	53.00	30.00
35.7	158.05	842.23	2,838.49	20,459.61	11.34	24.292	7.208	46.48	26.25
30.6	135.79	731.43	2,786.67	18,249.92	10.94	24.951	6.549	39.94	22.50
25.5	113.42	617.60	2,723.31	15,858.02	10.43	25.677	5.823	33.36	18.75
20.4	90.95	500.67	2,640.94	13,257.73	9.76	26.480	5.020	26.75	15.00
17.85	79.76	441.51	2,588.72	11,881.14	9.35	26.910	4.590	23.46	13.14
30 x 21 x 40.8	170.00	865.06	2,827.28	20,865.33	11.33	24.120	7.380	50.00	30.00
35.7	149.12	767.06	2,782.34	18,940.63	11.01	24.693	6.807	43.86	26.25
30.6	128.14	666.31	2,729.49	16,870.50	10.60	25.319	6.181	37.69	22.50
25.5	107.05	562.77	2,664.59	14,635.96	10.08	26.007	5.493	31.48	18.75
20.4	85.85	456.35	2,579.90	12,214.45	9.42	26.766	4.734	25.25	15.00
17.85	75.30	402.48	2,526.13	10,935.85	9.01	27.171	4.329	22.15	13.14
30 x 18 x 40.8	159.80	779.99	2,762.49	19,159.88	10.96	24.564	6.936	47.00	30.00
35.7	140.20	691.84	2,716.88	17,369.79	10.63	25.107	6.393	41.23	26.25
30.6	120.49	601.17	2,662.98	15,449.12	10.22	25.699	5.801	35.44	22.50
25.5	100.67	507.92	2,596.49	13,381.66	9.70	26.346	5.154	29.61	18.75
20.4	80.75	412.02	2,509.42	11,148.19	9.05	27.057	4.443	23.75	15.00
17.85	70.83	363.45	2,454.03	9,971.92	8.65	27.437	4.063	20.83	13.14
30 x 15 x 40.8	149.60	694.85	2,685.80	17,389.06	10.54	25.026	6.474	44.00	30.00
35.7	131.27	616.57	2,639.57	15,744.37	10.21	25.535	5.965	38.61	26.25
30.6	112.84	535.99	2,584.65	13,983.85	9.80	26.090	5.410	33.19	22.50
25.5	94.30	453.05	2,516.57	12,093.81	9.29	26.694	4.806	27.73	18.75
20.4	75.65	367.68	2,427.09	10,058.20	8.64	27.356	4.144	22.25	15.00
17.85	66.36	324.42	2,370.10	8,988.81	8.25	27.707	3.793	19.52	13.14
30 x 12 x 40.8	139.40	609.65	2,593.62	15,549.04	10.06	25.505	5.995	41.00	30.00
35.7	122.35	541.26	2,546.89	14,061.49	9.73	25.979	5.521	35.98	26.25
30.6	105.19	470.79	2,491.04	12,472.61	9.32	26.493	5.007	30.94	22.50
25.5	87.92	398.16	2,421.47	10,771.06	8.82	27.052	4.448	25.86	18.75
20.4	70.55	323.33	2,329.69	8,943.67	8.19	27.661	3.839	20.75	15.00
17.85	61.89	285.38	2,271.16	7,985.93	7.82	27.984	3.516	18.20	13.14
30 x 9 x 40.8	129.20	524.38	2,480.71	13,635.66	9.52	26.003	5.497	38.00	30.00
35.7	113.42	465.91	2,433.73	12,318.05	9.19	26.439	5.061	33.36	26.25
30.6	97.54	405.56	2,377.21	10,913.20	8.79	26.909	4.591	28.69	22.50
25.5	81.55	343.26	2,306.40	9,411.97	8.30	27.419	4.081	23.98	18.75
20.4	65.45	278.97	2,212.63	7,803.77	7.70	27.973	3.527	19.25	15.00
17.85	57.43	246.33	2,152.78	6,962.69	7.34	28.266	3.234	16.89	13.14
30 x 6 x 40.8	119.00	439.05	2,339.20	11,644.47	8.89	26.522	4.978	35.00	30.00
35.7	104.50	390.51	2,292.47	10,510.70	8.57	26.915	4.585	30.73	26.25
30.6	89.89	340.29	2,235.80	9,303.30	8.18	27.339	4.161	26.44	22.50
25.5	75.17	288.34	2,164.33	8,015.02	7.72	27.797	3.703	22.11	18.75
20.4	60.35	234.61	2,069.30	6,637.60	7.14	28.292	3.208	17.75	15.00
17.85	52.96	207.28	2,008.62	5,918.44	6.80	28.553	2.947	15.58	13.14
27 x 27 x 40.8	180.20	909.24	2,614.00	19,225.94	10.78	21.145	7.355	53.00	27.00
35.7	158.05	806.01	2,575.04	17,495.11	10.49	21.706	6.794	46.48	23.62
30.6	135.79	699.92	2,528.81	15,623.40	10.12	22.322	6.178	39.94	20.25



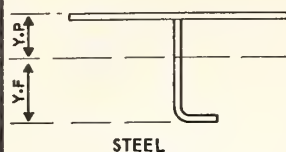
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		r	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ²	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	590.92	2,471.51	13,591.53	9.65	23.001	5.499	33.36	16.87
20.4	90.95	478.97	2,396.00	11,376.42	9.04	23.752	4.748	26.75	13.50
17.85	79.76	422.33	2,347.70	10,201.33	8.66	24.155	4.345	23.46	11.83
27 x 24 x 40.8	170.00	832.64	2,570.09	17,923.43	10.50	21.526	6.974	50.00	27.00
35.7	149.12	738.23	2,530.29	16,287.61	10.21	22.063	6.437	43.86	23.62
30.6	128.14	641.19	2,482.89	14,523.32	9.83	22.651	5.849	37.69	20.25
25.5	107.05	541.45	2,423.93	12,613.74	9.36	23.296	5.204	31.48	16.87
20.4	85.85	438.98	2,346.05	10,538.85	8.75	24.008	4.492	25.25	13.50
17.85	75.30	387.12	2,296.19	9,441.15	8.37	24.388	4.112	22.15	11.83
27 x 21 x 40.8	159.80	755.96	2,519.16	16,571.94	10.19	21.922	6.578	47.00	27.00
35.7	140.20	670.41	2,478.47	15,038.87	9.89	22.432	6.068	41.23	23.62
30.6	120.49	582.43	2,429.83	13,389.77	9.51	22.989	5.511	35.44	20.25
25.5	100.67	491.97	2,369.13	11,610.14	9.04	23.599	4.901	29.61	16.87
20.4	80.75	398.97	2,288.75	9,682.85	8.43	24.269	4.231	23.75	13.50
17.85	70.83	351.90	2,237.27	8,665.98	8.06	24.627	3.873	20.83	11.83
27 x 18 x 40.8	149.60	679.23	2,459.35	15,168.64	9.85	22.332	6.168	44.00	27.00
35.7	131.27	602.55	2,417.77	13,746.76	9.54	22.814	5.686	38.61	23.62
30.6	112.84	523.65	2,367.85	12,221.22	9.16	23.339	5.161	33.19	20.25
25.5	94.30	442.47	2,305.33	10,579.71	8.69	23.911	4.589	27.73	16.87
20.4	75.65	358.96	2,222.37	8,807.79	8.08	24.537	3.963	22.25	13.50
17.85	66.36	316.67	2,169.21	7,875.38	7.72	24.869	3.631	19.52	11.83
27 x 15 x 40.8	139.40	602.42	2,388.15	13,710.50	9.45	22.759	5.741	41.00	27.00
35.7	122.35	534.64	2,345.68	12,408.96	9.14	23.210	5.290	35.98	23.62
30.6	105.19	464.83	2,294.47	11,016.01	8.76	23.699	4.801	30.94	20.25
25.5	87.92	392.95	2,230.12	9,521.35	8.30	24.231	4.269	25.86	16.87
20.4	70.55	318.94	2,144.54	7,913.03	7.71	24.810	3.690	20.75	13.50
17.85	61.89	281.44	2,089.71	7,068.89	7.35	25.117	3.383	18.20	11.83
27 x 12 x 40.8	129.20	525.55	2,301.95	12,194.24	9.00	23.203	5.297	38.00	27.00
35.7	113.42	466.69	2,258.68	11,023.02	8.69	23.620	4.880	33.36	23.62
30.6	97.54	405.99	2,206.25	9,772.39	8.32	24.071	4.429	28.69	20.25
25.5	81.55	343.41	2,140.12	8,433.92	7.86	24.559	3.941	23.98	16.87
20.4	65.45	278.91	2,052.03	6,997.89	7.29	25.090	3.410	19.25	13.50
17.85	57.43	246.20	1,995.62	6,246.01	6.95	25.370	3.130	16.89	11.83
27 x 9 x 40.8	119.00	448.62	2,195.45	10,616.30	8.48	23.664	4.836	35.00	27.00
35.7	104.50	398.69	2,151.59	9,586.29	8.18	24.045	4.455	30.73	23.62
30.6	89.89	347.12	2,098.17	8,488.49	7.82	24.454	4.046	26.44	20.25
25.5	75.17	293.86	2,030.52	7,316.19	7.37	24.897	3.603	22.11	16.87
20.4	60.35	238.88	1,940.26	6,061.68	6.82	25.376	3.124	17.75	13.50
17.85	52.96	210.95	1,882.51	5,406.26	6.50	25.628	2.872	15.58	11.83
27 x 6 x 40.8	108.80	371.62	2,060.51	8,972.86	7.88	24.145	4.355	32.00	27.00
35.7	95.57	330.64	2,016.55	8,095.91	7.59	24.485	4.015	28.11	23.62
30.6	82.24	288.21	1,962.66	7,162.33	7.24	24.851	3.649	24.19	20.25
25.5	68.80	244.29	1,894.10	6,166.89	6.82	25.244	3.256	20.23	16.87
20.4	55.25	198.83	1,802.50	5,103.66	6.30	25.669	2.831	16.25	13.50
17.85	48.49	175.70	1,743.99	4,549.09	5.99	25.892	2.608	14.26	11.83
24 x 24 x 40.8	159.80	719.91	2,258.02	13,919.72	9.34	19.335	6.165	47.00	24.00
35.7	140.20	638.46	2,222.30	12,647.30	9.07	19.809	5.691	41.23	21.00
30.6	120.49	554.68	2,179.00	11,274.30	8.73	20.326	5.174	35.44	18.00
25.5	100.67	468.51	2,124.22	9,788.10	8.30	20.892	4.608	29.61	15.00
20.4	80.75	379.92	2,050.80	8,173.79	7.75	21.514	3.986	23.75	12.00
17.85	70.83	335.08	2,003.40	7,320.21	7.41	21.846	3.654	20.83	10.51
24 x 22 x 40.8	153.00	674.39	2,227.87	13,201.00	9.16	19.575	5.925	45.00	24.00
35.7	134.25	598.19	2,191.45	11,982.93	8.88	20.032	5.468	39.48	21.00
30.6	115.39	519.77	2,147.22	10,671.05	8.54	20.530	4.970	33.94	18.00
25.5	96.42	439.10	2,091.19	9,253.96	8.11	21.075	4.425	28.36	15.00
20.4	77.35	356.15	2,016.03	7,718.25	7.55	21.672	3.828	22.75	12.00
17.85	67.85	314.14	1,967.54	6,907.75	7.22	21.989	3.511	19.96	10.51

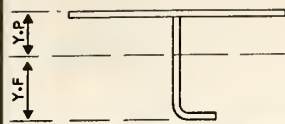


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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61.2 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	628.85	2,194.30	12,463.79	8.95	19.820	5.680	43.00	24.00
35.7	128.30	557.90	2,157.17	11,303.10	8.67	20.260	5.240	37.73	21.00
30.6	110.29	484.85	2,111.97	10,055.32	8.33	20.739	4.761	32.44	18.00
25.5	92.17	409.69	2,054.63	8,710.25	7.90	21.261	4.239	27.11	15.00
20.4	73.95	332.37	1,977.70	7,255.93	7.35	21.831	3.669	21.75	12.00
17.85	64.87	293.20	1,928.09	6,489.80	7.02	22.134	3.366	19.08	10.51
24 x 18 x 40.8	139.40	583.28	2,156.71	11,707.38	8.73	20.072	5.428	41.00	24.00
35.7	122.35	517.58	2,118.83	10,607.23	8.45	20.494	5.006	35.98	21.00
30.6	105.19	449.92	2,072.64	9,426.71	8.11	20.952	4.548	30.94	18.00
25.5	87.92	380.27	2,013.97	8,156.72	7.68	21.450	4.050	25.86	15.00
20.4	70.55	308.58	1,935.22	6,786.67	7.14	21.993	3.507	20.75	12.00
17.85	61.89	272.26	1,884.49	6,066.25	6.81	22.281	3.219	18.20	10.51
24 x 16 x 40.8	132.60	537.68	2,114.33	10,931.00	8.49	20.330	5.170	39.00	24.00
35.7	116.40	477.25	2,075.70	9,894.78	8.21	20.733	4.767	34.23	21.00
30.6	100.09	414.98	2,028.50	8,784.82	7.87	21.169	4.331	29.44	18.00
25.5	83.67	350.84	1,968.47	7,593.10	7.44	21.643	3.857	24.61	15.00
20.4	67.15	284.79	1,887.90	6,310.31	6.91	22.157	3.343	19.75	12.00
17.85	58.92	251.32	1,836.04	5,636.98	6.59	22.430	3.070	17.33	10.51
24 x 14 x 40.8	125.80	492.05	2,066.16	10,133.85	8.23	20.595	4.905	37.00	24.00
35.7	110.45	436.89	2,026.79	9,165.13	7.95	20.978	4.522	32.48	21.00
30.6	94.99	380.02	1,978.59	8,129.22	7.61	21.391	4.109	27.94	18.00
25.5	79.42	321.40	1,917.21	7,019.11	7.19	21.839	3.661	23.36	15.00
20.4	63.75	261.00	1,834.84	5,826.70	6.66	22.324	3.176	18.75	12.00
17.85	55.94	230.37	1,781.90	5,201.88	6.35	22.581	2.919	16.45	10.51
24 x 12 x 40.8	119.00	446.39	2,010.94	9,315.09	7.95	20.868	4.632	35.00	24.00
35.7	104.50	396.52	1,970.87	8,417.65	7.67	21.229	4.271	30.73	21.00
30.6	89.89	345.05	1,921.70	7,459.46	7.33	21.618	3.882	26.44	18.00
25.5	75.17	291.96	1,859.02	6,434.46	6.91	22.039	3.461	22.11	15.00
20.4	60.35	237.20	1,774.93	5,335.65	6.40	22.494	3.006	17.75	12.00
17.85	52.96	209.42	1,720.98	4,760.83	6.10	22.734	2.766	15.58	10.51
24 x 10 x 40.8	112.20	400.70	1,947.01	8,473.82	7.63	21.148	4.352	33.00	24.00
35.7	98.55	356.12	1,906.31	7,651.68	7.35	21.486	4.014	28.98	21.00
30.6	84.79	310.07	1,856.26	6,775.09	7.02	21.850	3.650	24.94	18.00
25.5	70.92	262.51	1,792.39	5,838.85	6.62	22.242	3.258	20.86	15.00
20.4	56.95	213.40	1,706.77	4,837.01	6.12	22.666	2.834	16.75	12.00
17.85	49.98	188.46	1,651.94	4,313.71	5.82	22.889	2.611	14.70	10.51
24 x 8 x 40.8	105.40	354.98	1,872.11	7,609.11	7.28	21.436	4.064	31.00	24.00
35.7	92.60	315.71	1,830.95	6,866.53	7.01	21.750	3.750	27.23	21.00
30.6	79.69	275.08	1,780.20	6,075.61	6.69	22.087	3.413	23.44	18.00
25.5	66.67	233.05	1,715.36	5,231.97	6.29	22.450	3.050	19.61	15.00
20.4	53.55	189.60	1,628.51	4,330.60	5.81	22.841	2.659	15.75	12.00
17.85	47.00	167.51	1,573.04	3,860.38	5.53	23.046	2.454	13.82	10.51
24 x 6 x 40.8	98.60	309.23	1,783.17	6,719.96	6.89	21.731	3.769	29.00	24.00
35.7	86.65	275.27	1,741.82	6,061.47	6.63	22.020	3.480	25.48	21.00
30.6	74.59	240.07	1,690.68	5,360.53	6.31	22.329	3.171	21.94	18.00
25.5	62.42	203.58	1,625.26	4,613.49	5.94	22.661	2.839	18.36	15.00
20.4	50.15	165.79	1,537.74	3,816.23	5.48	23.018	2.482	14.75	12.00
17.85	44.02	146.55	1,482.00	3,400.73	5.21	23.205	2.295	12.95	10.51
21 x 20 x 40.8	136.00	532.17	1,888.79	9,341.76	7.83	17.554	4.946	40.00	21.00
35.7	119.37	472.35	1,855.22	8,471.06	7.58	17.934	4.566	35.11	18.37
30.6	102.64	410.69	1,813.71	7,534.50	7.27	18.346	4.154	30.19	15.75
25.5	85.80	347.18	1,760.32	6,524.74	6.88	18.793	3.707	25.23	13.12
20.4	68.85	281.79	1,687.96	5,433.23	6.40	19.281	3.219	20.25	10.50
17.85	60.40	248.65	1,641.13	4,858.49	6.11	19.540	2.960	17.77	9.20
21 x 18 x 40.8	129.20	492.23	1,854.56	8,752.18	7.63	17.781	4.719	38.00	21.00
35.7	113.42	437.00	1,820.14	7,928.80	7.37	18.144	4.356	33.36	18.37
30.6	97.54	380.05	1,777.54	7,044.86	7.06	18.537	3.963	28.69	15.75



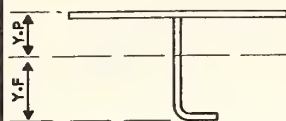
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

50t

STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	321.36	1,722.74	6,093.86	6.68	18.963	3.537	23.98	13.12
20.4	65.45	260.91	1,648.56	5,068.27	6.20	19.426	3.074	19.25	10.50
17.85	57.43	230.26	1,600.64	4,529.27	5.92	19.670	2.830	16.89	9.20
21 x 16 x 40.8	122.40	452.26	1,815.82	8,146.72	7.41	18.013	4.487	36.00	21.00
35.7	107.47	401.62	1,780.52	7,373.37	7.15	18.359	4.141	31.61	18.37
30.6	92.44	349.39	1,736.80	6,544.71	6.84	18.732	3.768	27.19	15.75
25.5	77.30	295.53	1,680.58	5,655.02	6.47	19.135	3.365	22.73	13.12
20.4	62.05	240.02	1,604.58	4,697.74	5.99	19.572	2.928	18.25	10.50
17.85	54.45	211.87	1,555.60	4,195.55	5.71	19.803	2.697	16.01	9.20
21 x 14 x 40.8	115.60	412.26	1,771.59	7,524.74	7.17	18.253	4.247	34.00	21.00
35.7	101.52	366.23	1,735.43	6,804.29	6.91	18.579	3.921	29.86	18.37
30.6	87.34	318.72	1,690.59	6,033.69	6.61	18.931	3.569	25.69	15.75
25.5	73.05	269.69	1,632.95	5,207.98	6.23	19.311	3.189	21.48	13.12
20.4	58.65	219.13	1,555.17	4,321.49	5.77	19.721	2.779	17.25	10.50
17.85	51.47	193.47	1,505.18	3,857.26	5.50	19.937	2.563	15.14	9.20
21 x 12 x 40.8	108.80	372.23	1,720.64	6,885.54	6.90	18.498	4.002	32.00	21.00
35.7	95.57	330.82	1,683.63	6,221.05	6.65	18.805	3.695	28.11	18.37
30.6	82.24	288.04	1,637.71	5,511.47	6.35	19.135	3.365	24.19	15.75
25.5	68.80	243.85	1,578.70	4,752.53	5.98	19.490	3.010	20.23	13.12
20.4	55.25	198.23	1,499.27	3,939.39	5.53	19.872	2.628	16.25	10.50
17.85	48.49	175.07	1,448.36	3,514.29	5.27	20.074	2.426	14.26	9.20
21 x 10 x 40.8	102.00	332.17	1,661.30	6,228.41	6.61	18.751	3.749	30.00	21.00
35.7	89.62	295.39	1,623.51	5,623.11	6.36	19.036	3.464	26.36	18.37
30.6	77.14	257.34	1,576.60	4,977.65	6.07	19.343	3.157	22.69	15.75
25.5	64.55	218.00	1,516.37	4,288.42	5.71	19.672	2.828	18.98	13.12
20.4	51.85	177.33	1,435.49	3,551.32	5.27	20.026	2.474	15.25	10.50
17.85	45.51	156.67	1,383.84	3,166.55	5.02	20.212	2.288	13.39	9.20
21 x 8 x 40.8	95.20	292.08	1,591.30	5,552.57	6.29	19.011	3.489	28.00	21.00
35.7	83.67	259.93	1,552.90	5,009.91	6.04	19.274	3.226	24.61	18.37
30.6	72.04	226.63	1,505.19	4,431.86	5.76	19.556	2.944	21.19	15.75
25.5	60.30	192.14	1,443.98	3,815.40	5.41	19.858	2.642	17.73	13.12
20.4	48.45	156.43	1,362.05	3,157.12	4.99	20.182	2.318	14.25	10.50
17.85	42.53	138.26	1,309.94	2,813.94	4.74	20.352	2.148	12.51	9.20
21 x 6 x 40.8	88.40	251.96	1,507.51	4,857.21	5.92	19.278	3.222	26.00	21.00
35.7	77.72	224.46	1,468.79	4,380.86	5.69	19.517	2.983	22.86	18.37
30.6	66.94	195.91	1,420.63	3,873.69	5.41	19.773	2.727	19.69	15.75
25.5	56.05	166.27	1,358.91	3,333.21	5.08	20.047	2.453	16.48	13.12
20.4	45.05	135.52	1,276.57	2,756.65	4.68	20.341	2.159	13.25	10.50
17.85	39.56	119.86	1,224.46	2,456.35	4.45	20.494	2.006	11.63	9.20
18 x 18 x 40.8	119.00	406.16	1,553.12	6,278.28	6.52	15.458	4.042	35.00	18.00
35.7	104.50	360.87	1,522.03	5,688.25	6.30	15.763	3.737	30.73	15.75
30.6	89.89	314.08	1,483.04	5,054.23	6.03	16.092	3.408	26.44	13.50
25.5	75.17	265.79	1,432.39	4,371.73	5.70	16.448	3.052	22.11	11.25
20.4	60.35	215.97	1,363.49	3,635.60	5.28	16.834	2.666	17.75	9.00
15.3	45.42	164.61	1,263.51	2,839.92	4.75	17.252	2.248	13.36	6.75
18 x 16 x 40.8	112.20	371.86	1,518.07	5,824.50	6.33	15.663	3.837	33.00	18.00
35.7	98.55	330.49	1,486.04	5,272.04	6.10	15.952	3.548	28.98	15.75
30.6	84.79	287.73	1,445.88	4,679.58	5.84	16.264	3.236	24.94	13.50
25.5	70.92	243.58	1,393.82	4,043.19	5.51	16.599	2.901	20.86	11.25
20.4	56.95	198.00	1,323.22	3,358.43	5.10	16.962	2.538	16.75	9.00
15.3	42.87	150.98	1,221.34	2,620.20	4.58	17.355	2.145	12.61	6.75
18 x 14 x 40.8	105.40	337.53	1,477.91	5,358.08	6.11	15.875	3.625	31.00	18.00
35.7	92.60	300.09	1,444.92	4,845.42	5.89	16.147	3.353	27.23	15.75
30.6	79.69	261.37	1,403.60	4,296.66	5.62	16.439	3.061	23.44	13.50
25.5	66.67	221.36	1,350.15	3,708.45	5.30	16.753	2.747	19.61	11.25
20.4	53.55	180.02	1,277.92	3,076.95	4.90	17.092	2.408	15.75	9.00
15.3	40.32	137.35	1,174.36	2,397.82	4.39	17.458	2.042	11.86	6.75



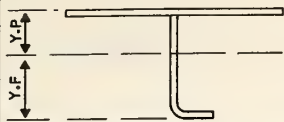
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

50t

STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	Y F	Y P	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	303.16	1,431.42	4,878.47	5.87	16.092	3.408	29.00	18.00
35.7	86.65	269.67	1,397.50	4,407.97	5.65	16.346	3.154	25.48	15.75
30.6	74.59	235.00	1,355.07	3,905.20	5.39	16.618	2.882	21.94	13.50
25.5	62.42	199.13	1,300.29	3,367.30	5.07	16.910	2.590	18.36	11.25
20.4	50.15	162.04	1,226.60	2,791.04	4.68	17.225	2.275	14.75	9.00
15.3	37.77	123.71	1,121.70	2,172.75	4.19	17.563	1.937	11.11	6.75
18 x 10 x 40.8	91.80	268.77	1,376.98	4,385.12	5.61	16.315	3.185	27.00	18.00
35.7	80.70	239.23	1,342.21	3,959.29	5.39	16.550	2.950	23.73	15.75
30.6	69.49	208.61	1,298.76	3,504.91	5.13	16.801	2.699	20.44	13.50
25.5	58.17	176.89	1,242.84	3,019.58	4.83	17.070	2.430	17.11	11.25
20.4	46.75	144.05	1,167.98	2,500.60	4.45	17.359	2.141	13.75	9.00
15.3	35.22	110.08	1,062.25	1,944.93	3.98	17.669	1.831	10.36	6.75
18 x 8 x 40.8	85.00	234.35	1,312.36	3,877.42	5.31	16.545	2.955	25.00	18.00
35.7	74.75	208.77	1,276.91	3,498.93	5.10	16.760	2.740	21.98	15.75
30.6	64.39	182.21	1,232.68	3,095.48	4.85	16.989	2.511	18.94	13.50
25.5	53.92	154.64	1,175.92	2,665.09	4.56	17.234	2.266	15.86	11.25
20.4	43.35	126.06	1,100.36	2,205.52	4.20	17.496	2.004	12.75	9.00
15.3	32.67	96.44	994.62	1,714.31	3.75	17.776	1.724	9.61	6.75
18 x 6 x 40.8	78.20	199.90	1,234.40	3,354.74	4.98	16.782	2.718	23.00	18.00
35.7	68.80	178.29	1,198.61	3,026.44	4.78	16.975	2.525	20.23	15.75
30.6	59.29	155.79	1,154.01	2,676.61	4.54	17.181	2.319	17.44	13.50
25.5	49.67	132.39	1,096.97	2,303.62	4.26	17.400	2.100	14.61	11.25
20.4	39.95	108.07	1,021.51	1,905.69	3.92	17.634	1.866	11.75	9.00
15.3	30.12	82.80	917.00	1,480.84	3.49	17.885	1.615	8.86	6.75



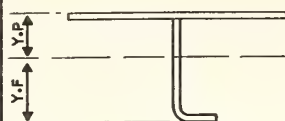
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 18 x 30.6	89.89	102.53	212.80	1,262.79	6.61	5.934	12.316	26.44	13.50
25.5	75.17	92.44	184.36	1,123.61	6.76	6.095	12.155	22.11	11.25
20.4	60.35	82.20	154.17	978.42	6.95	6.346	11.904	17.75	9.00
15.3	45.42	71.80	121.86	824.54	7.21	6.766	11.484	13.36	6.75
18 x 16 x 30.6	84.79	101.05	194.59	1,213.83	6.65	6.238	12.012	24.94	13.50
25.5	70.92	91.13	168.57	1,079.54	6.80	6.404	11.846	20.86	11.25
20.4	56.95	81.07	140.97	939.30	6.99	6.663	11.587	16.75	9.00
15.3	42.87	70.85	111.45	790.46	7.23	7.093	11.157	12.61	6.75
18 x 14 x 30.6	79.69	99.31	176.25	1,159.22	6.69	6.577	11.673	23.44	13.50
25.5	66.67	89.60	152.70	1,030.50	6.83	6.749	11.501	19.61	11.25
20.4	53.55	79.74	127.72	895.90	7.01	7.015	11.235	15.75	9.00
15.3	40.32	69.73	101.00	752.82	7.24	7.453	10.797	11.86	6.75
18 x 12 x 30.6	74.59	97.23	157.80	1,097.91	6.70	6.958	11.292	21.94	13.50
25.5	62.42	87.76	136.75	975.57	6.84	7.134	11.116	18.36	11.25
20.4	50.15	78.16	114.42	847.47	7.01	7.407	10.843	14.75	9.00
15.3	37.77	68.39	90.53	711.03	7.23	7.854	10.396	11.11	6.75
18 x 10 x 30.6	69.49	94.70	139.22	1,028.59	6.70	7.388	10.862	20.44	13.50
25.5	58.17	85.54	120.71	913.66	6.83	7.569	10.681	17.11	11.25
20.4	46.75	76.24	101.07	793.08	6.99	7.847	10.403	13.75	9.00
15.3	35.22	66.78	80.04	664.37	7.19	8.301	9.949	10.36	6.75
18 x 8 x 30.6	64.39	91.56	120.52	949.58	6.66	7.879	10.371	18.94	13.50
25.5	53.92	82.78	104.59	843.31	6.78	8.063	10.187	15.86	11.25
20.4	43.35	73.86	87.66	731.55	6.93	8.345	9.905	12.75	9.00
15.3	32.67	64.78	69.51	611.94	7.11	8.804	9.446	9.61	6.75
18 x 6 x 30.6	59.29	87.56	101.70	858.69	6.56	8.443	9.807	17.44	13.50
25.5	49.67	79.28	88.38	762.70	6.68	8.629	9.621	14.61	11.25
20.4	39.95	70.84	74.20	661.40	6.81	8.913	9.337	11.75	9.00
15.3	30.12	58.96	62.24	552.57	6.97	9.372	8.878	8.86	6.75
18 x 4 x 30.6	54.19	82.30	82.75	753.02	6.39	9.100	9.150	15.94	13.50
25.5	45.42	72.09	74.66	669.38	6.50	9.285	8.965	13.36	11.25
20.4	36.55	60.69	66.88	580.66	6.62	9.567	8.683	10.75	9.00
15.3	27.57	48.38	58.92	484.82	6.76	10.022	8.228	8.11	6.75
16 x 12 x 30.6	69.49	81.33	135.94	826.91	6.00	6.083	10.167	20.44	12.00
25.5	58.17	73.83	118.12	738.26	6.14	6.250	10.000	17.11	10.00
20.4	46.75	66.19	99.07	644.81	6.30	6.509	9.741	13.75	8.00
15.3	35.22	58.42	78.54	544.40	6.51	6.932	9.318	10.36	6.00
16 x 10 x 30.6	64.39	79.30	119.49	774.55	6.01	6.482	9.768	18.94	12.00
25.5	53.92	72.03	103.86	691.15	6.14	6.655	9.595	15.86	10.00
20.4	43.35	64.63	87.16	603.05	6.29	6.919	9.331	12.75	8.00
15.3	32.67	57.09	69.14	508.16	6.48	7.349	8.901	9.61	6.00
16 x 8 x 30.6	59.29	76.74	102.90	714.32	5.99	6.942	9.308	17.44	12.00
25.5	49.67	69.77	89.51	637.16	6.10	7.118	9.132	14.61	10.00
20.4	39.95	62.67	75.19	555.44	6.24	7.387	8.863	11.75	8.00
15.3	30.12	55.43	59.72	467.15	6.41	7.822	8.428	8.86	6.00
16 x 6 x 30.6	54.19	73.43	86.18	644.30	5.91	7.476	8.774	15.94	12.00
25.5	45.42	66.85	75.08	574.66	6.02	7.654	8.596	13.36	10.00
20.4	36.55	60.14	63.17	500.63	6.15	7.926	8.324	10.75	8.00
15.3	27.57	50.27	53.29	420.33	6.29	8.362	7.888	8.11	6.00
16 x 4 x 30.6	49.09	68.99	69.33	561.89	5.76	8.105	8.145	14.44	12.00
25.5	41.17	60.55	62.94	501.48	5.86	8.283	7.967	12.11	10.00
20.4	33.15	51.08	56.76	436.89	5.97	8.552	7.698	9.75	8.00
15.3	25.02	40.78	50.42	366.39	6.10	8.984	7.266	7.36	6.00



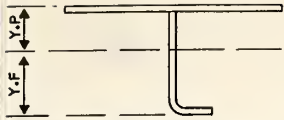
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 12 x 30.6	66.94	73.82	125.36	708.51	5.65	5.652	9.598	19.69	11.25
25.5	56.05	67.22	109.09	634.25	5.78	5.814	9.436	16.48	9.37
20.4	45.05	60.49	91.63	555.66	5.94	6.064	9.186	13.25	7.50
15.3	33.95	53.64	72.71	470.75	6.14	6.474	8.776	9.98	5.62
15 x 11 x 30.6	64.39	72.97	117.68	686.86	5.66	5.837	9.413	18.94	11.25
25.5	53.92	66.46	102.42	614.67	5.79	6.001	9.249	15.86	9.37
20.4	43.35	59.83	86.04	538.19	5.94	6.255	8.995	12.75	7.50
15.3	32.67	53.08	68.30	455.47	6.13	6.669	8.581	9.61	5.62
15 x 10 x 30.6	61.84	72.01	109.97	663.64	5.66	6.035	9.215	18.19	11.25
25.5	51.80	65.62	95.73	593.71	5.79	6.202	9.048	15.23	9.37
20.4	41.65	59.10	80.44	519.54	5.93	6.459	8.791	12.25	7.50
15.3	31.40	52.45	63.88	439.21	6.12	6.876	8.374	9.23	5.62
15 x 9 x 30.6	59.29	70.94	102.23	638.68	5.66	6.248	9.002	17.44	11.25
25.5	49.67	64.67	89.02	571.22	5.78	6.417	8.833	14.61	9.37
20.4	39.95	58.27	74.83	499.58	5.92	6.677	8.573	11.75	7.50
15.3	30.12	51.74	59.45	421.88	6.09	7.097	8.153	8.86	5.62
15 x 8 x 30.6	56.74	69.73	94.45	611.77	5.65	6.477	8.773	16.69	11.25
25.5	47.55	63.60	82.28	547.03	5.76	6.648	8.602	13.98	9.37
20.4	38.25	57.34	69.20	478.17	5.90	6.910	8.340	11.25	7.50
15.3	28.85	50.95	55.01	403.36	6.06	7.332	7.918	8.48	5.62
15 x 7 x 30.6	54.19	68.35	86.64	582.67	5.62	6.725	8.525	15.94	11.25
25.5	45.42	62.37	75.52	520.93	5.73	6.898	8.352	13.36	9.37
20.4	36.55	56.27	63.55	455.14	5.86	7.162	8.088	10.75	7.50
15.3	27.57	50.04	50.56	383.54	6.01	7.585	7.665	8.11	5.62
15 x 6 x 30.6	51.64	66.76	78.79	551.11	5.58	6.995	8.255	15.19	11.25
25.5	43.30	60.96	68.73	492.69	5.69	7.168	8.082	12.73	9.37
20.4	34.85	55.05	57.89	430.31	5.81	7.433	7.817	10.25	7.50
15.3	26.30	46.11	48.99	362.26	5.95	7.856	7.394	7.73	5.62
15 x 5 x 30.6	49.09	64.90	70.91	516.75	5.52	7.288	7.962	14.44	11.25
25.5	41.17	59.32	61.92	462.03	5.62	7.462	7.788	12.11	9.37
20.4	33.15	52.22	53.62	403.45	5.74	7.726	7.524	9.75	7.50
15.3	25.02	41.65	47.78	339.36	5.87	8.148	7.102	7.36	5.62
15 x 4 x 30.6	46.54	62.71	62.99	479.22	5.44	7.608	7.642	13.69	11.25
25.5	39.05	55.09	57.39	428.64	5.54	7.781	7.469	11.48	9.37
20.4	31.45	46.53	51.94	374.31	5.64	8.044	7.206	9.25	7.50
15.3	23.75	37.18	46.36	314.66	5.76	8.462	6.788	6.98	5.62
14 x 10 x 30.6	59.29	65.01	100.69	562.95	5.31	5.591	8.659	17.44	10.50
25.5	49.67	59.44	87.79	505.05	5.43	5.753	8.497	14.61	8.75
20.4	39.95	53.75	73.88	443.35	5.58	6.001	8.249	11.75	7.00
15.3	30.12	47.94	58.73	376.11	5.75	6.404	7.846	8.86	5.25
14 x 9 x 30.6	56.74	64.07	93.49	541.72	5.31	5.795	8.455	16.69	10.50
25.5	47.55	58.60	81.53	485.83	5.43	5.959	8.291	13.98	8.75
20.4	38.25	53.01	68.63	426.20	5.57	6.210	8.040	11.25	7.00
15.3	28.85	47.31	54.58	361.12	5.73	6.616	7.634	8.48	5.25
14 x 8 x 30.6	54.19	63.00	86.24	518.76	5.30	6.015	8.235	15.94	10.50
25.5	45.42	57.64	75.24	465.10	5.42	6.181	8.069	13.36	8.75
20.4	36.55	52.18	63.36	407.76	5.55	6.435	7.815	10.75	7.00
15.3	27.57	46.59	50.42	345.06	5.70	6.843	7.407	8.11	5.25
14 x 7 x 30.6	51.64	61.76	78.96	493.85	5.28	6.254	7.996	15.19	10.50
25.5	43.30	56.55	68.93	442.67	5.39	6.422	7.828	12.73	8.75
20.4	34.85	51.22	58.08	387.87	5.52	6.678	7.572	10.25	7.00
15.3	26.30	45.77	46.26	327.84	5.66	7.087	7.163	7.73	5.25



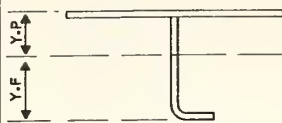
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
14 x 6 x 30.6	49.09	60.34	71.65	466.74	5.25	6.515	7.735	14.44	10.50
25.5	41.17	55.29	62.59	418.32	5.35	6.684	7.566	12.11	8.75
20.4	33.15	50.12	52.79	366.36	5.47	6.940	7.310	9.75	7.00
15.3	25.02	42.08	44.83	309.30	5.60	7.350	6.900	7.36	5.25
14 x 5 x 30.6	46.54	58.67	64.29	437.13	5.20	6.799	7.451	13.69	10.50
25.5	39.05	53.81	56.23	391.80	5.29	6.968	7.282	11.48	8.75
20.4	31.45	47.48	48.83	343.02	5.40	7.225	7.025	9.25	7.00
15.3	23.75	37.90	43.72	289.30	5.52	7.633	6.617	6.98	5.25
14 x 4 x 30.6	43.99	56.68	56.90	404.64	5.12	7.111	7.139	12.94	10.50
25.5	36.92	49.84	52.05	362.80	5.21	7.280	6.970	10.86	8.75
20.4	29.75	42.15	47.30	317.60	5.31	7.535	6.715	8.75	7.00
15.3	22.47	33.71	42.41	267.65	5.42	7.940	6.310	6.61	5.25
13 x 9 x 30.6	54.19	57.47	84.98	454.26	4.96	5.346	7.904	15.94	9.75
25.5	45.42	52.75	74.24	408.63	5.08	5.504	7.746	13.36	8.12
20.4	36.55	47.93	62.59	359.67	5.21	5.746	7.504	10.75	6.50
15.3	27.57	43.00	49.83	305.84	5.37	6.137	7.113	8.11	4.87
13 x 8 x 30.6	51.64	56.53	78.27	434.90	4.96	5.556	7.694	15.19	9.75
25.5	43.30	51.91	68.40	391.07	5.07	5.717	7.533	12.73	8.12
20.4	34.85	47.20	57.69	343.96	5.19	5.962	7.288	10.25	6.50
15.3	26.30	42.36	45.96	292.07	5.34	6.355	6.895	7.73	4.87
13 x 7 x 30.6	49.09	55.44	71.53	413.84	4.94	5.786	7.464	14.44	9.75
25.5	41.17	50.95	62.54	372.01	5.05	5.948	7.302	12.11	8.12
20.4	33.15	46.35	52.78	326.97	5.17	6.195	7.055	9.75	6.50
15.3	25.02	41.63	42.07	277.26	5.30	6.590	6.660	7.36	4.87
13 x 6 x 30.6	46.54	54.18	64.74	390.83	4.91	6.037	7.213	13.69	9.75
25.5	39.05	49.82	56.65	351.26	5.01	6.200	7.050	11.48	8.12
20.4	31.45	45.36	47.85	308.53	5.12	6.448	6.802	9.25	6.50
15.3	23.75	38.18	40.78	261.27	5.25	6.843	6.407	6.98	4.87
13 x 5 x 30.6	43.99	52.69	57.92	365.59	4.87	6.312	6.938	12.94	9.75
25.5	36.92	48.50	50.74	328.56	4.96	6.476	6.774	10.86	8.12
20.4	29.75	42.90	44.20	288.46	5.06	6.724	6.526	8.75	6.50
15.3	22.47	34.28	39.78	243.98	5.18	7.117	6.133	6.61	4.87
13 x 4 x 30.6	41.44	50.91	51.06	337.77	4.80	6.615	6.635	12.19	9.75
25.5	34.80	44.80	46.92	303.63	4.88	6.778	6.472	10.23	8.12
20.4	28.05	37.94	42.81	266.52	4.98	7.025	6.225	8.25	6.50
15.3	21.20	30.37	38.59	225.19	5.08	7.415	5.835	6.23	4.87
12 x 9 x 30.6	51.64	51.15	76.70	375.91	4.61	4.901	7.349	15.19	9.00
25.5	43.30	47.14	67.15	339.28	4.72	5.053	7.197	12.73	7.50
20.4	34.85	43.04	56.71	299.72	4.85	5.286	6.964	10.25	6.00
15.3	26.30	38.82	45.20	255.85	5.00	5.660	6.590	7.73	4.50
12 x 8 x 30.6	49.09	50.34	70.54	359.83	4.61	5.101	7.149	14.44	9.00
25.5	41.17	46.41	61.76	324.62	4.71	5.256	6.994	12.11	7.50
20.4	33.15	42.39	52.18	286.51	4.84	5.491	6.759	9.75	6.00
15.3	25.02	38.26	41.61	244.19	4.98	5.868	6.382	7.36	4.50
12 x 7 x 30.6	46.54	49.39	64.33	342.27	4.60	5.320	6.930	13.69	9.00
25.5	39.05	45.57	56.36	308.64	4.70	5.477	6.773	11.48	7.50
20.4	31.45	41.64	47.63	272.18	4.81	5.714	6.536	9.25	6.00
15.3	23.75	37.61	38.01	231.61	4.94	6.093	6.157	6.98	4.50
12 x 6 x 30.6	43.99	48.29	58.09	323.00	4.57	5.561	6.689	12.94	9.00
25.5	36.92	44.58	50.92	291.17	4.67	5.718	6.532	10.86	7.50
20.4	29.75	40.77	43.07	256.58	4.78	5.957	6.293	8.75	6.00
15.3	22.47	34.41	36.86	217.99	4.89	6.336	5.914	6.61	4.50



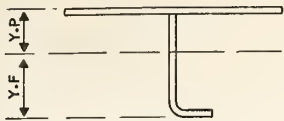
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

10.2 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
12 x 5 x 30.6	41.44	46.97	51.80	301.76	4.53	5.825	6.425	12.19	9.00
25.5	34.80	43.40	45.46	271.99	4.62	5.984	6.266	10.23	7.50
20.4	28.05	38.49	39.74	239.53	4.72	6.222	6.028	8.25	6.00
15.3	21.20	30.79	35.96	203.20	4.82	6.600	5.650	6.23	4.50
12 x 4 x 30.6	38.89	45.38	45.48	278.25	4.47	6.119	6.131	11.44	9.00
25.5	32.67	39.96	41.99	250.83	4.55	6.276	5.974	9.61	7.50
20.4	26.35	33.90	38.49	220.81	4.64	6.514	5.736	7.75	6.00
15.4	19.92	27.16	34.89	187.09	4.73	6.887	5.363	5.86	4.50
11 x 8 x 25.5	39.05	41.14	55.32	265.42	4.36	4.798	6.452	11.48	6.87
22.95	35.29	39.48	51.21	250.78	4.41	4.897	6.353	10.38	6.19
20.4	31.45	37.76	46.82	235.17	4.47	5.023	6.227	9.25	5.50
17.85	27.64	36.06	42.27	218.91	4.54	5.178	6.072	8.13	4.82
15.3	23.75	34.29	37.39	201.24	4.61	5.382	5.868	6.98	4.12
11 x 7 x 25.5	36.92	40.41	50.37	252.23	4.35	5.008	6.242	10.86	6.87
22.95	33.38	38.79	46.64	238.22	4.40	5.108	6.142	9.82	6.19
20.4	29.75	37.12	42.65	223.26	4.45	5.235	6.015	8.75	5.50
17.85	26.15	35.45	38.52	207.67	4.51	5.392	5.858	7.69	4.82
15.3	22.47	33.73	34.08	190.70	4.58	5.596	5.654	6.61	4.12
11 x 6 x 25.5	34.80	39.55	45.39	237.76	4.32	5.238	6.012	10.23	6.87
22.95	31.46	37.98	42.04	224.47	4.37	5.339	5.911	9.25	6.19
20.4	28.05	36.35	38.46	210.25	4.42	5.467	5.783	8.25	5.50
17.85	24.66	34.73	34.75	195.42	4.48	5.624	5.626	7.25	4.82
15.3	21.20	30.76	33.06	179.26	4.53	5.828	5.422	6.23	4.12
11 x 5 x 25.5	32.67	38.52	40.38	221.79	4.28	5.492	5.758	9.61	6.87
22.95	29.55	37.01	37.42	209.32	4.32	5.594	5.656	8.69	6.19
20.4	26.35	34.25	35.44	195.97	4.37	5.721	5.529	7.75	5.50
17.85	23.17	30.97	33.88	182.01	4.42	5.878	5.372	6.82	4.82
15.3	19.92	27.43	32.27	166.79	4.47	6.081	5.169	5.86	4.12
11 x 4 x 25.5	30.55	35.34	37.27	204.09	4.22	5.774	5.476	8.98	6.87
22.95	27.64	32.78	35.83	192.58	4.26	5.875	5.375	8.13	6.19
20.4	24.65	30.03	34.34	180.23	4.30	6.002	5.248	7.25	5.50
17.85	21.69	27.17	32.85	167.29	4.34	6.157	5.093	6.38	4.82
15.3	18.65	24.09	31.30	153.15	4.38	6.358	4.892	5.48	4.12
10 x 8 x 25.5	36.92	36.09	49.07	213.16	3.99	4.344	5.906	10.86	6.25
22.95	33.38	34.73	45.48	201.83	4.05	4.438	5.812	9.82	5.63
20.4	29.75	33.32	41.62	189.67	4.11	4.557	5.693	8.75	5.00
17.85	26.15	31.91	37.61	176.95	4.17	4.704	5.546	7.69	4.38
15.3	22.47	30.45	33.29	163.02	4.23	4.897	5.353	6.61	3.75
10 x 7 x 25.5	34.80	35.47	44.58	202.48	3.99	4.542	5.708	10.23	6.25
22.95	31.46	34.14	41.32	191.62	4.04	4.637	5.613	9.25	5.63
20.4	28.05	32.76	37.83	179.96	4.09	4.757	5.493	8.25	5.00
17.85	24.66	31.39	34.19	167.73	4.15	4.906	5.344	7.25	4.38
15.3	21.20	29.96	30.27	154.35	4.20	5.099	5.151	6.23	3.75
10 x 6 x 25.5	32.67	34.74	40.06	190.70	3.97	4.760	5.490	9.61	6.25
22.95	29.55	33.44	37.14	180.38	4.01	4.856	5.394	8.69	5.63
20.4	26.35	32.11	34.01	169.29	4.06	4.977	5.273	7.75	5.00
17.85	23.17	30.75	30.77	157.65	4.11	5.126	5.124	6.82	4.38
15.3	19.92	27.24	29.38	144.89	4.16	5.319	4.931	5.86	3.75
12.75	16.69	23.56	27.99	131.12	4.21	5.566	4.684	4.91	3.13
10 x 5 x 25.5	30.55	33.85	35.51	177.64	3.93	5.002	5.248	8.98	6.25
22.95	27.64	32.61	32.94	167.96	3.98	5.099	5.151	8.13	5.63
20.4	24.65	30.18	31.32	157.54	4.02	5.220	5.030	7.25	5.00
17.85	21.69	27.30	30.03	146.58	4.06	5.368	4.882	6.38	4.38
15.3	18.65	24.20	28.69	134.55	4.11	5.560	4.690	5.48	3.75



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

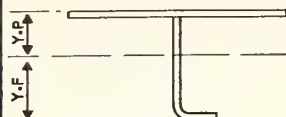
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STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 4 x 25.5	28.42	30.93	32.76	163.09	3.88	5.272	4.978	8.36	6.25
22.95	25.72	28.72	31.58	154.15	3.91	5.368	4.882	7.57	5.63
20.4	22.95	26.33	30.35	144.51	3.95	5.488	4.762	6.75	5.00
17.85	20.20	23.84	29.12	134.35	3.99	5.636	4.614	5.94	4.38
15.3	17.37	21.15	27.84	123.18	4.02	5.825	4.425	5.11	3.75
9 x 6 x 25.5	30.55	30.15	34.94	149.69	3.61	4.285	4.965	8.98	5.62
20.4	24.65	28.03	29.73	133.46	3.70	4.489	4.761	7.25	4.50
15.3	18.65	23.85	25.83	114.70	3.79	4.810	4.440	5.48	3.37
10.2	12.54	17.13	23.52	91.68	3.85	5.353	3.897	3.69	2.25
9 x 5 x 25.5	28.42	29.39	30.85	139.24	3.58	4.513	4.737	8.36	5.62
20.4	22.95	26.28	27.36	123.98	3.66	4.718	4.532	6.75	4.50
15.3	17.37	21.10	25.23	106.29	3.74	5.037	4.213	5.11	3.37
10.2	11.69	15.17	23.00	84.56	3.77	5.573	3.677	3.44	2.25
9 x 4 x 25.5*	26.30	26.73	28.46	127.52	3.53	4.770	4.480	7.73	5.62
20.4*	21.25	22.81	26.52	113.42	3.60	4.973	4.277	6.25	4.50
15.3	16.10	18.34	24.49	97.01	3.66	5.289	3.961	4.73	3.37
10.2	10.84	13.22	22.34	76.82	3.68	5.812	3.438	3.19	2.25
8 x 6 x 25.5*	28.42	25.78	30.01	114.40	3.25	3.812	4.438	8.36	5.00
20.4*	22.95	24.13	25.61	102.50	3.33	4.002	4.248	6.75	4.00
15.3	17.37	20.59	22.40	88.51	3.41	4.299	3.951	5.11	3.00
10.2	11.69	14.80	20.58	71.01	3.46	4.799	3.451	3.44	2.00
8 x 5 x 25.5	26.30	25.15	26.40	106.26	3.22	4.025	4.225	7.73	5.00
20.4	21.25	22.54	23.56	95.05	3.30	4.216	4.034	6.25	4.00
15.3	16.10	18.14	21.89	81.83	3.36	4.512	3.738	4.73	3.00
10.2	10.84	13.05	20.12	65.30	3.39	5.004	3.246	3.19	2.00
8 x 4 x 25.5*	24.17	22.75	24.37	97.06	3.18	4.267	3.983	7.11	5.00
20.4*	19.55	19.45	22.85	86.70	3.24	4.456	3.794	5.75	4.00
15.3	14.82	15.67	21.26	74.43	3.29	4.749	3.501	4.36	3.00
10.2	9.99	11.30	19.55	59.08	3.30	5.229	3.021	2.94	2.00

*Indicates similarity to (L) shape.



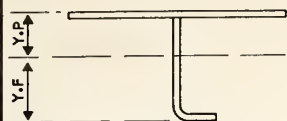
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

11.47 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 18 x 30.6	89.89	112.57	219.03	1,359.30	6.78	6.206	12.075	26.44	13.50
25.5	75.17	102.53	189.93	1,217.24	6.94	6.409	11.872	22.11	11.25
20.4	60.35	92.34	158.92	1,067.70	7.15	6.718	11.563	17.75	9.00
15.3	45.42	81.99	125.60	906.89	7.41	7.220	11.061	13.36	6.75
18 x 16 x 30.6	84.79	110.98	200.31	1,305.50	6.82	6.517	11.764	24.94	13.50
25.5	70.92	101.11	173.70	1,168.33	6.97	6.726	11.555	20.86	11.25
20.4	56.95	91.10	145.35	1,023.74	7.17	7.043	11.238	16.75	9.00
15.3	42.87	80.93	114.89	868.02	7.42	7.555	10.726	12.61	6.75
18 x 14 x 30.6	79.69	109.10	181.48	1,245.65	6.84	6.864	11.417	23.44	13.50
25.5	66.67	99.45	157.38	1,114.04	7.00	7.078	11.203	19.61	11.25
20.4	53.55	89.64	131.73	975.13	7.18	7.403	10.878	15.75	9.00
15.3	40.32	79.67	104.16	825.27	7.41	7.923	10.358	11.86	6.75
18 x 12 x 30.6	74.59	106.86	162.54	1,178.65	6.85	7.252	11.029	21.94	13.50
25.5	62.42	97.46	140.99	1,053.45	7.00	7.472	10.809	18.36	11.25
20.4	50.15	87.90	118.06	921.09	7.17	7.802	10.479	14.75	9.00
15.3	37.77	78.18	93.40	778.02	7.39	8.330	9.951	11.11	6.75
18 x 10 x 30.6	69.49	104.15	143.47	1,103.14	6.84	7.689	10.592	20.44	13.50
25.5	58.17	95.04	124.53	985.40	6.97	7.913	10.368	17.11	11.25
20.4	46.75	85.79	104.34	860.66	7.14	8.249	10.032	13.75	9.00
15.3	35.22	76.38	82.62	725.54	7.33	8.781	9.500	10.36	6.75
18 x 8 x 30.6	64.39	100.77	124.29	1,017.38	6.79	8.185	10.096	18.94	13.50
25.5	53.92	92.05	107.98	908.40	6.91	8.413	9.868	15.86	11.25
20.4	43.35	83.18	90.57	792.63	7.06	8.752	9.529	12.75	9.00
15.3	32.67	71.81	74.14	666.88	7.23	9.286	8.995	9.61	6.75
18 x 6 x 30.6	59.29	96.48	104.99	919.14	6.68	8.754	9.527	17.44	13.50
25.5	49.67	88.25	91.35	820.57	6.80	8.983	9.298	14.61	11.25
20.4	39.95	76.75	79.86	715.49	6.93	9.322	8.959	11.75	9.00
15.3	30.12	60.98	71.31	600.90	7.07	9.854	8.427	8.86	6.75
18 x 4 x 30.6	54.19	85.58	90.83	805.48	6.50	9.413	8.868	15.94	13.50
25.5	45.42	74.64	83.25	719.45	6.60	9.639	8.642	13.36	11.25
20.4	36.55	62.89	75.51	627.24	6.72	9.974	8.307	10.75	9.00
15.3	27.57	50.12	67.60	526.14	6.83	10.498	7.783	8.11	6.75
16 x 12 x 30.6	69.49	89.97	140.19	892.19	6.15	6.364	9.917	20.44	12.00
25.5	58.17	82.51	121.89	801.10	6.29	6.572	9.709	17.11	10.00
20.4	46.75	74.93	102.26	704.04	6.45	6.885	9.396	13.75	8.00
15.3	35.22	67.20	81.02	598.01	6.65	7.381	8.900	10.36	6.00
16 x 10 x 30.6	64.39	87.77	125.27	834.66	6.15	6.771	9.510	18.94	12.00
25.5	53.92	80.55	107.23	748.86	6.28	6.984	9.297	15.86	10.00
20.4	43.35	73.19	90.01	657.23	6.43	7.302	8.979	12.75	8.00
15.3	32.67	65.70	71.36	556.91	6.61	7.804	8.477	9.61	6.00
16 x 8 x 30.6	59.29	85.00	106.23	768.76	6.11	7.237	9.044	17.44	12.00
25.5	49.67	78.08	92.48	689.27	6.23	7.453	8.828	14.61	10.00
20.4	39.95	71.02	77.70	604.14	6.37	7.775	8.506	11.75	8.00
15.3	30.12	61.68	63.82	510.68	6.52	8.280	8.001	8.86	6.00
16 x 6 x 30.6	54.19	81.42	89.06	692.51	6.02	7.776	8.505	15.94	12.00
25.5	45.42	74.89	77.64	620.67	6.13	7.994	8.287	13.36	10.00
20.4	36.55	65.35	68.23	543.43	6.25	8.316	7.965	10.75	8.00
15.3	27.57	51.97	61.41	458.29	6.38	8.818	7.463	8.11	6.00
16 x 4 x 30.6	49.09	71.76	76.62	603.28	5.86	8.407	7.874	14.44	12.00
25.5	41.17	62.72	70.62	540.83	5.95	8.623	7.658	12.11	10.00
20.4	33.15	52.94	64.48	473.30	6.06	8.941	7.340	9.75	8.00
15.3	25.02	42.23	58.19	398.42	6.16	9.434	6.847	7.36	6.00



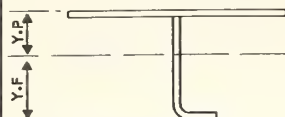
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

11.47 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 12 x 30.6	66.94	81.95	129.36	766.60	5.79	5.926	9.355	19.69	11.25
25.5	56.05	75.39	112.62	690.11	5.93	6.128	9.153	16.48	9.37
20.4	45.05	68.72	94.59	608.22	6.09	6.430	8.851	13.25	7.50
15.3	33.95	61.90	75.00	518.21	6.28	6.910	8.371	9.98	5.62
15 x 11 x 30.6	64.39	81.02	121.46	742.66	5.80	6.115	9.166	18.94	11.25
25.5	53.92	74.56	105.76	668.26	5.93	6.319	8.962	15.86	9.37
20.4	43.35	67.98	88.85	588.51	6.08	6.624	8.657	12.75	7.50
15.3	32.67	61.26	70.46	500.76	6.26	7.107	8.174	9.61	5.62
15 x 10 x 30.6	61.84	79.99	113.52	717.05	5.80	6.316	8.965	18.19	11.25
25.5	51.80	73.64	98.87	644.93	5.92	6.523	8.758	15.23	9.37
20.4	41.65	67.16	83.08	567.53	6.07	6.831	8.450	12.25	7.50
15.3	31.40	60.55	65.91	482.26	6.24	7.317	7.964	9.23	5.62
15 x 9 x 30.6	59.29	78.82	105.56	689.58	5.79	6.533	8.748	17.44	11.25
25.5	49.67	72.60	91.96	619.96	5.91	6.741	8.540	14.61	9.37
20.4	39.95	66.24	77.31	545.14	6.05	7.052	8.229	11.75	7.50
15.3	30.12	59.75	61.36	462.60	6.20	7.539	7.742	8.86	5.62
15 x 8 x 30.6	56.74	77.51	97.56	660.03	5.77	6.765	8.516	16.69	11.25
25.5	47.55	71.42	85.03	593.16	5.88	6.976	8.305	13.98	9.37
20.4	38.25	65.20	71.52	521.20	6.01	7.288	7.993	11.25	7.50
15.3	28.85	56.80	58.85	441.68	6.16	7.776	7.505	8.48	5.62
15 x 7 x 30.6	54.19	76.01	89.53	628.16	5.74	7.016	8.265	15.94	11.25
25.5	45.42	70.08	78.08	564.34	5.85	7.228	8.053	13.36	9.37
20.4	36.55	64.02	65.71	495.53	5.97	7.541	7.740	10.75	7.50
15.3	27.57	52.23	57.82	419.36	6.10	8.028	7.253	8.11	5.62
15 x 6 x 30.6	51.64	74.28	81.46	593.70	5.69	7.288	7.993	15.19	11.25
25.5	43.30	68.53	71.10	533.26	5.79	7.500	7.781	12.73	9.37
20.4	34.85	59.90	62.66	467.95	5.91	7.813	7.468	10.25	7.50
15.3	26.30	47.66	56.64	395.51	6.03	8.298	6.983	7.73	5.62
15 x 5 x 30.6	49.09	72.26	73.36	556.29	5.62	7.583	7.698	14.44	11.25
25.5	41.17	64.10	66.73	499.63	5.72	7.794	7.487	12.11	9.37
20.4	33.15	54.07	61.08	438.24	5.83	8.106	7.175	9.75	7.50
15.3	25.02	43.08	55.27	369.95	5.93	8.588	6.693	7.36	5.62
15 x 4 x 30.6	46.54	65.23	69.88	515.56	5.53	7.904	7.377	13.69	11.25
25.5	39.05	57.08	64.62	463.13	5.62	8.114	7.167	11.48	9.37
20.4	31.45	48.22	59.21	406.13	5.72	8.422	6.859	9.25	7.50
15.3	23.75	38.49	53.66	342.51	5.81	8.898	6.383	6.98	5.62
14 x 10 x 30.6	59.29	72.48	104.01	610.03	5.44	5.865	8.416	17.44	10.50
25.5	49.67	66.96	90.71	550.14	5.56	6.065	8.216	14.61	8.75
20.4	39.95	61.31	76.32	485.51	5.71	6.362	7.919	11.75	7.00
15.3	30.12	55.53	60.59	413.80	5.87	6.830	7.451	8.86	5.25
14 x 9 x 30.6	56.74	71.45	96.59	586.53	5.44	6.073	8.208	16.69	10.50
25.5	47.55	66.03	84.26	528.68	5.55	6.274	8.007	13.98	8.75
20.4	38.25	60.49	70.91	466.17	5.69	6.574	7.707	11.25	7.00
15.3	28.85	54.82	56.32	396.72	5.84	7.044	7.237	8.48	5.25
14 x 8 x 30.6	54.19	70.28	89.13	561.19	5.42	6.296	7.985	15.94	10.50
25.5	45.42	64.98	77.79	505.61	5.53	6.500	7.781	13.36	8.75
20.4	36.55	59.56	65.49	445.45	5.66	6.801	7.480	10.75	7.00
15.3	27.57	52.05	54.00	378.50	5.80	7.272	7.009	8.11	5.25
14 x 7 x 30.6	51.64	68.94	81.64	533.79	5.39	6.538	7.743	15.19	10.50
25.5	43.30	63.77	71.29	480.72	5.50	6.743	7.538	12.73	8.75
20.4	34.85	58.49	60.06	423.18	5.62	7.046	7.235	10.25	7.00
15.3	26.30	47.77	53.07	359.03	5.74	7.516	6.765	7.73	5.25



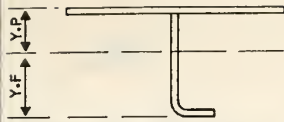
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
14 x 6 x 30.6	49.09	67.39	74.11	504.04	5.35	6.801	7.480	14.44	10.50
25.5	41.17	62.38	64.77	453.79	5.45	7.007	7.274	12.11	8.75
20.4	33.15	54.61	57.25	399.18	5.56	7.309	6.972	9.75	7.00
15.3	25.02	43.48	51.99	338.17	5.67	7.777	6.504	7.36	5.25
14 x 5 x 30.6	46.54	65.57	66.55	471.66	5.29	7.087	7.194	13.69	10.50
25.5	39.05	58.22	60.75	424.57	5.39	7.292	6.989	11.48	8.75
20.4	31.45	49.15	55.81	373.25	5.49	7.594	6.687	9.25	7.00
15.3	23.75	39.19	50.74	315.76	5.58	8.058	6.223	6.98	5.25
14 x 4 x 30.6	43.99	58.95	63.40	436.26	5.21	7.400	6.881	12.94	10.50
25.5	36.92	51.65	58.82	392.74	5.29	7.604	6.677	10.86	8.75
20.4	29.75	43.68	54.11	345.14	5.38	7.902	6.379	8.75	7.00
15.3	22.47	34.88	49.25	291.64	5.46	8.360	5.921	6.61	5.25
13 x 9 x 30.6	54.19	64.36	87.85	493.34	5.08	5.615	7.666	15.94	9.75
25.5	45.42	59.69	76.76	445.94	5.20	5.810	7.471	13.36	8.12
20.4	36.55	54.91	64.68	394.39	5.33	6.098	7.183	10.75	6.50
15.3	27.57	50.00	51.41	336.66	5.47	6.549	6.732	8.11	4.87
13 x 8 x 30.6	51.64	63.33	80.94	471.86	5.07	5.830	7.451	15.19	9.75
25.5	43.30	58.76	70.74	426.29	5.18	6.026	7.255	12.73	8.12
20.4	34.85	54.08	59.63	376.64	5.30	6.316	6.965	10.25	6.50
15.3	26.30	47.43	49.28	320.95	5.43	6.768	6.513	7.73	4.87
13 x 7 x 30.6	49.09	62.14	73.99	448.56	5.05	6.062	7.219	14.44	9.75
25.5	41.17	57.69	64.70	405.03	5.15	6.260	7.021	12.11	8.12
20.4	33.15	53.13	54.57	357.52	5.26	6.551	6.730	9.75	6.50
15.3	25.02	43.43	48.44	304.13	5.38	7.002	6.279	7.36	4.87
13 x 6 x 30.6	46.54	60.75	67.01	423.18	5.01	6.316	6.965	13.69	9.75
25.5	39.05	56.44	58.64	381.96	5.11	6.514	6.767	11.48	8.12
20.4	31.45	49.50	52.02	336.86	5.21	6.805	6.476	9.25	6.50
15.3	23.75	39.43	47.47	286.07	5.31	7.254	6.027	6.98	4.87
13 x 5 x 30.6	43.99	59.12	59.99	395.45	4.96	6.592	6.689	12.94	9.75
25.5	36.92	52.55	54.98	356.83	5.05	6.790	6.491	10.86	8.12
20.4	29.75	44.41	50.71	314.46	5.14	7.080	6.201	8.75	6.50
15.3	22.47	35.43	46.33	266.62	5.23	7.526	5.755	6.61	4.87
13 x 4 x 30.6	41.44	52.93	57.17	365.00	4.88	6.896	6.385	12.19	9.75
25.5	34.80	46.44	53.22	329.36	4.96	7.093	6.188	10.23	8.12
20.4	28.05	39.31	49.16	290.10	5.04	7.380	5.901	8.25	6.50
15.3	21.20	31.41	44.97	245.62	5.11	7.819	5.462	6.23	4.87
12 x 9 x 30.6	51.64	57.54	79.35	409.61	4.73	5.162	7.119	15.19	9.00
25.5	43.30	53.57	69.45	371.41	4.83	5.348	6.933	12.73	7.50
20.4	34.85	49.50	58.60	329.55	4.96	5.624	6.657	10.25	6.00
15.3	26.30	45.32	46.62	282.22	5.09	6.054	6.227	7.73	4.50
12 x 8 x 30.6	49.09	56.64	72.99	391.66	4.72	5.366	6.915	14.44	9.00
25.5	41.17	52.76	63.90	354.89	4.82	5.554	6.727	12.11	7.50
20.4	33.15	48.77	53.93	314.54	4.94	5.832	6.449	9.75	6.00
15.3	25.02	42.93	44.68	268.85	5.06	6.263	6.018	7.36	4.50
12 x 7 x 30.6	46.54	55.60	66.59	372.11	4.70	5.588	6.693	13.69	9.00
25.5	39.05	51.82	58.32	336.97	4.80	5.778	6.503	11.48	7.50
20.4	31.45	47.93	49.25	298.32	4.90	6.057	6.224	9.25	6.00
15.3	23.75	39.23	43.93	254.50	5.01	6.488	5.793	6.98	4.50
12 x 6 x 30.6	43.99	54.38	60.15	350.74	4.67	5.831	6.450	12.94	9.00
25.5	36.92	50.72	52.72	317.44	4.76	6.022	6.259	10.86	7.50
20.4	29.75	44.56	46.95	280.74	4.86	6.301	5.980	8.75	6.00
15.3	22.47	35.52	43.06	239.03	4.95	6.730	5.551	6.61	4.50



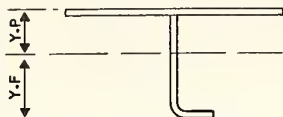
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	I	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
12 x 5 x 30.6	41.44	52.93	53.67	327.28	4.62	6.098	6.183	12.19	9.00
25.5	34.80	47.09	49.41	296.10	4.70	6.288	5.993	10.23	7.50
20.4	28.05	39.84	45.78	261.62	4.79	6.566	5.715	8.25	6.00
15.3	21.20	31.80	42.03	222.34	4.87	6.991	5.290	6.23	4.50
12 x 4 x 30.6	38.89	47.16	51.18	301.42	4.54	6.392	5.889	11.44	9.00
25.5	32.67	41.43	47.83	272.67	4.62	6.581	5.700	9.61	7.50
20.4	26.35	35.12	44.38	240.75	4.70	6.856	5.425	7.75	6.00
15.3	19.92	28.08	40.79	204.26	4.76	7.274	5.007	5.86	4.50
11 x 8 x 25.5	39.05	46.98	57.25	291.10	4.46	5.085	6.196	11.48	6.87
22.95	35.29	45.34	52.97	275.58	4.51	5.203	6.078	10.38	6.19
20.4	31.45	43.64	48.40	258.88	4.57	5.349	5.932	9.25	5.50
17.85	27.64	41.95	43.65	241.32	4.62	5.528	5.753	8.13	4.82
15.3	23.75	38.56	40.20	222.01	4.68	5.758	5.523	6.98	4.12
11 x 7 x 25.5	36.92	46.16	52.14	276.21	4.44	5.298	5.983	10.86	6.87
22.95	33.38	44.56	48.25	261.34	4.49	5.416	5.865	9.82	6.19
20.4	29.75	42.91	44.10	245.32	4.54	5.563	5.718	8.75	5.50
17.85	26.15	39.78	41.25	228.46	4.59	5.743	5.538	7.69	4.82
15.3	22.47	35.15	39.54	209.92	4.64	5.972	5.309	6.61	4.12
11 x 6 x 25.5	34.80	45.20	47.00	259.93	4.41	5.530	5.751	10.23	6.87
22.95	31.46	43.51	43.65	245.81	4.45	5.649	5.632	9.25	6.19
20.4	28.05	39.78	42.04	230.58	4.50	5.796	5.485	8.25	5.50
17.85	24.66	35.90	40.43	214.53	4.54	5.975	5.306	7.25	4.82
15.3	21.20	31.74	38.77	196.87	4.58	6.203	5.078	6.23	4.12
11 x 5 x 25.5	32.67	41.84	44.05	242.07	4.35	5.786	5.495	9.61	6.87
22.95	29.55	38.75	42.55	228.80	4.39	5.904	5.377	8.69	6.19
20.4	26.35	35.45	41.01	214.48	4.43	6.051	5.230	7.75	5.50
17.85	23.17	32.01	39.46	199.37	4.47	6.228	5.053	6.82	4.82
15.3	19.92	28.32	37.85	182.73	4.50	6.453	4.828	5.86	4.12
11 x 4 x 25.5	30.55	36.65	42.65	222.36	4.28	6.067	5.214	8.98	6.87
22.95	27.64	33.97	41.23	210.10	4.32	6.185	5.096	8.13	6.19
20.4	24.65	31.10	39.75	196.84	4.35	6.329	4.952	7.25	5.50
17.85	21.69	28.11	38.27	182.82	4.38	6.504	4.777	6.38	4.82
15.3	18.65	24.89	36.74	167.36	4.40	6.725	4.556	5.48	4.12
10 x 8 x 25.5	36.92	41.43	50.80	234.60	4.09	4.618	5.663	10.86	6.25
22.95	33.38	40.08	47.05	222.50	4.14	4.729	5.552	9.82	5.63
20.4	29.75	38.69	43.02	209.42	4.19	4.868	5.413	8.75	5.00
17.85	26.15	37.29	38.83	195.56	4.25	5.037	5.244	7.69	4.38
15.3	22.47	34.31	35.85	180.24	4.30	5.253	5.028	6.61	3.75
10 x 7 x 25.5	34.80	40.73	46.16	222.45	4.08	4.819	5.462	10.23	6.25
22.95	31.46	39.41	42.76	210.85	4.12	4.931	5.350	9.25	5.63
20.4	28.05	38.05	39.11	198.27	4.17	5.070	5.211	8.25	5.00
17.85	24.66	35.30	36.69	184.96	4.22	5.239	5.042	7.25	4.38
15.3	21.20	31.20	35.27	170.23	4.26	5.455	4.826	6.23	3.75
10 x 6 x 25.5	32.67	39.90	41.49	209.12	4.05	5.040	5.241	9.61	6.25
22.95	29.55	38.45	38.62	198.08	4.09	5.152	5.129	8.69	5.63
20.4	26.35	35.17	37.30	186.11	4.13	5.291	4.990	7.75	5.00
17.85	23.17	31.76	35.97	173.43	4.17	5.460	4.821	6.82	4.38
15.3	19.92	28.09	34.60	159.38	4.20	5.674	4.607	5.86	3.75
12.75	16.69	24.24	33.21	144.07	4.23	5.943	4.338	4.91	3.13
10 x 5 x 25.5	30.55	36.80	38.90	194.41	4.00	5.283	4.998	8.98	6.25
22.95	27.64	34.11	37.67	184.04	4.04	5.395	4.886	8.13	5.63
20.4	24.65	31.23	36.40	172.79	4.07	5.533	4.748	7.25	5.00
17.85	21.69	28.21	35.12	160.84	4.11	5.701	4.580	6.38	4.38
15.3	18.65	24.96	33.79	147.60	4.13	5.912	4.369	5.48	3.75



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

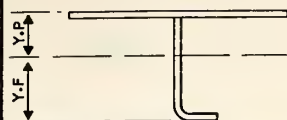
11.47 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 4 x 25.5	28.42	32.08	37.67	178.11	3.93	5.553	4.728	8.36	6.25
22.95	25.72	29.76	36.50	168.53	3.96	5.664	4.617	7.57	5.63
20.4	22.95	27.26	35.29	158.11	4.00	5.800	4.481	6.75	5.00
17.85	20.20	24.65	34.07	147.04	4.02	5.965	4.316	5.94	4.38
15.3	17.37	21.83	32.79	134.75	4.04	6.172	4.109	5.11	3.75
9 x 6 x 25.5	30.55	34.81	36.19	164.68	3.68	4.550	4.731	8.98	5.62
20.4	24.65	30.74	32.72	147.10	3.76	4.786	4.495	7.25	4.50
15.3	18.65	24.58	30.54	126.39	3.82	5.143	4.138	5.48	3.37
10.2	12.54	17.56	28.22	100.47	3.83	5.721	3.560	3.69	2.25
9 x 5 x 25.5	28.42	31.97	33.96	152.83	3.64	4.780	4.501	8.36	5.62
20.4	22.95	27.18	31.95	136.29	3.71	5.015	4.266	6.75	4.50
15.3	17.37	21.75	29.84	116.76	3.76	5.368	3.913	5.11	3.37
10.2	11.69	15.56	27.58	92.34	3.74	5.934	3.347	3.44	2.25
9 x 4 x 25.5*	26.30	27.72	32.89	139.62	3.58	5.037	4.244	7.73	5.62
20.4*	21.25	23.60	30.98	124.32	3.64	5.268	4.013	6.25	4.50
15.3	16.10	18.92	28.96	106.21	3.67	5.614	3.667	4.73	3.37
10.2	10.84	13.56	26.80	83.57	3.63	6.162	3.119	3.19	2.25
8 x 6 x 25.5*	28.42	29.94	31.10	126.31	3.31	4.062	4.219	8.36	5.00
20.4*	22.95	26.47	28.31	113.30	3.38	4.280	4.001	6.75	4.00
15.3	17.37	21.20	26.60	97.70	3.44	4.609	3.672	5.11	3.00
10.2	11.69	15.15	24.76	77.84	3.44	5.137	3.144	3.44	2.00
8 x 5 x 25.5	26.30	27.36	29.22	117.00	3.28	4.277	4.004	7.73	5.00
20.4	21.25	23.31	27.66	104.74	3.34	4.494	3.787	6.25	4.00
15.3	16.10	18.68	26.00	90.01	3.38	4.819	3.462	4.73	3.00
10.2	10.84	13.37	24.21	71.31	3.35	5.335	2.946	3.19	2.00
8 x 4 x 25.5*	24.17	23.59	28.32	106.56	3.22	4.518	3.763	7.11	5.00
20.4*	19.55	20.12	26.83	95.21	3.27	4.732	3.549	5.75	4.00
15.3	14.82	16.15	25.24	81.56	3.29	5.050	3.231	4.36	3.00
10.2	9.99	11.58	23.51	64.25	3.25	5.549	2.732	2.94	2.00

*Indicates similarity to (L) shape.

PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

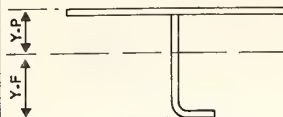
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STEEL

12.75 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ⁴
21 x 20 x 30.6	102.64	157.39	293.55	2,183.65	8.00	7.439	13.874	30.19	15.75
25.5	85.80	143.63	253.90	1,955.19	8.19	7.701	13.612	25.23	13.12
20.4	68.85	129.70	211.90	1,714.73	8.42	8.092	13.221	20.25	10.50
17.85	60.40	122.72	190.05	1,589.26	8.56	8.362	12.951	17.77	9.20
21 x 18 x 30.6	97.54	155.38	271.17	2,105.29	8.04	7.764	13.549	28.69	15.75
25.5	81.55	141.84	234.56	1,883.86	8.22	8.032	13.281	23.98	13.12
20.4	65.45	128.12	195.78	1,650.56	8.44	8.431	12.882	19.25	10.50
17.85	57.43	121.25	175.61	1,528.70	8.57	8.705	12.608	16.89	9.20
21 x 16 x 30.6	92.44	153.07	248.69	2,019.38	8.06	8.120	13.193	27.19	15.75
25.5	77.30	139.78	215.14	1,805.85	8.23	8.394	12.919	22.73	13.12
20.4	62.05	126.31	179.62	1,580.60	8.44	8.800	12.513	18.25	10.50
17.85	54.45	119.56	161.14	1,462.83	8.57	9.078	12.235	16.01	9.20
21 x 14 x 30.6	87.34	150.37	226.11	1,924.77	8.06	8.513	12.800	25.69	15.75
25.5	73.05	137.37	195.66	1,720.16	8.23	8.791	12.522	21.48	13.12
20.4	58.65	124.20	163.42	1,504.03	8.43	9.204	12.109	17.25	10.50
17.85	51.47	117.60	146.63	1,390.90	8.54	9.486	11.827	15.14	9.20
21 x 12 x 30.6	82.24	147.18	203.43	1,820.07	8.05	8.947	12.366	24.19	15.75
25.5	68.80	134.54	176.12	1,625.60	8.20	9.230	12.083	20.23	13.12
20.4	55.25	121.72	147.17	1,419.87	8.39	9.648	11.665	16.25	10.50
17.85	48.49	115.28	132.10	1,312.04	8.50	9.932	11.381	14.26	9.20
21 x 10 x 30.6	77.14	143.36	180.65	1,703.57	8.00	9.430	11.883	22.69	15.75
25.5	64.55	131.14	156.50	1,520.73	8.15	9.717	11.596	18.98	13.12
20.4	51.85	118.74	130.89	1,326.92	8.32	10.138	11.175	15.25	10.50
17.85	45.51	112.52	117.54	1,225.20	8.41	10.424	10.889	13.39	9.20
21 x 8 x 30.6	72.04	138.71	157.77	1,573.15	7.92	9.971	11.342	21.19	15.75
25.5	60.30	127.00	136.82	1,403.75	8.05	10.260	11.053	17.73	13.12
20.4	48.45	114.56	115.11	1,223.75	8.21	10.682	10.631	14.25	10.50
17.85	42.53	102.94	109.14	1,129.09	8.29	10.968	10.345	12.51	9.20
21 x 6 x 30.6	66.94	132.89	134.78	1,426.17	7.77	10.581	10.732	19.69	15.75
25.5	56.05	117.06	121.84	1,272.44	7.90	10.869	10.444	16.48	13.12
20.4	45.05	98.19	110.60	1,108.56	8.04	11.290	10.023	13.25	10.50
17.85	39.56	88.32	104.95	1,022.16	8.11	11.574	9.739	11.63	9.20
18 x 18 x 30.6	89.89	124.20	225.35	1,466.31	6.95	6.507	11.806	26.44	13.50
25.5	75.17	114.22	195.47	1,320.23	7.12	6.754	11.559	22.11	11.25
20.4	60.35	104.08	163.55	1,164.77	7.33	7.122	11.191	17.75	9.00
15.3	45.42	93.78	129.13	994.85	7.59	7.704	10.609	13.36	6.75
18 x 16 x 30.6	84.79	122.47	206.12	1,406.91	6.98	6.826	11.487	24.94	13.50
25.5	70.92	112.67	178.80	1,265.70	7.15	7.079	11.234	20.86	11.25
20.4	56.95	102.71	149.61	1,115.24	7.35	7.454	10.859	16.75	9.00
15.3	42.87	92.58	118.15	950.54	7.58	8.046	10.267	12.61	6.75
18 x 14 x 30.6	79.69	120.45	186.79	1,341.00	7.00	7.179	11.134	23.44	13.50
25.5	66.67	110.85	162.05	1,205.39	7.16	7.439	10.874	19.61	11.25
20.4	53.55	101.09	135.62	1,060.67	7.34	7.821	10.492	15.75	9.00
15.3	40.32	91.17	107.14	902.02	7.56	8.419	9.894	11.86	6.75
18 x 12 x 30.6	74.59	118.02	167.34	1,267.45	7.00	7.574	10.739	21.94	13.50
25.5	62.42	108.67	145.22	1,138.31	7.15	7.838	10.475	18.36	11.25
20.4	50.15	99.17	121.59	1,000.27	7.32	8.226	10.087	14.75	9.00
15.3	37.77	89.49	96.11	848.66	7.52	8.830	9.483	11.11	6.75
18 x 10 x 30.6	69.49	115.08	147.78	1,184.85	6.98	8.018	10.295	20.44	13.50
25.5	58.17	106.04	128.32	1,063.26	7.11	8.286	10.027	17.11	11.25
20.4	46.75	96.84	107.52	933.02	7.27	8.678	9.635	13.75	9.00
15.3	35.22	85.06	87.46	789.68	7.44	9.284	9.029	10.36	6.75



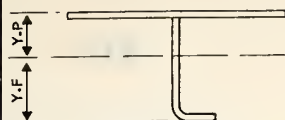
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

12.75 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 8 x 30.6	64.39	111.44	128.11	1,091.42	6.91	8.519	9.794	18.94	13.50
25.5	53.92	102.77	111.35	978.73	7.04	8.790	9.523	15.86	11.25
20.4	43.35	93.40	93.95	857.71	7.17	9.184	9.129	12.75	9.00
15.3	32.67	73.98	84.95	724.17	7.32	9.789	8.524	9.61	6.75
18 x 6 x 30.6	59.29	106.80	108.33	984.87	6.79	9.091	9.222	17.44	13.50
25.5	49.67	94.30	98.62	882.80	6.90	9.362	8.951	14.61	11.25
20.4	39.95	79.23	90.29	772.78	7.02	9.754	8.559	11.75	9.00
15.3	30.12	62.88	81.77	650.97	7.14	10.352	7.961	8.86	6.75
18 x 4 x 30.6	54.19	88.44	100.69	862.23	6.59	9.750	8.563	15.94	13.50
25.5	45.42	77.17	93.17	772.99	6.69	10.017	8.296	13.36	11.25
20.4	36.55	65.02	85.48	676.28	6.79	10.402	7.911	10.75	9.00
15.3	27.57	51.76	77.61	568.64	6.88	10.986	7.327	8.11	6.75
16 x 12 x 30.6	69.49	99.96	144.45	963.76	6.29	6.672	9.641	20.44	12.00
25.5	58.17	92.56	125.60	869.33	6.43	6.921	9.392	17.11	10.00
20.4	46.75	85.02	105.33	767.47	6.59	7.286	9.027	13.75	8.00
15.3	35.22	77.33	83.32	654.27	6.77	7.852	8.461	10.36	6.00
16 x 10 x 30.6	64.39	97.57	127.07	900.31	6.28	7.085	9.228	18.94	12.00
25.5	53.92	90.40	110.54	811.25	6.40	7.339	8.974	15.86	10.00
20.4	43.35	83.09	92.75	714.96	6.55	7.709	8.604	12.75	8.00
15.3	32.67	73.43	75.63	607.76	6.70	8.277	8.036	9.61	6.00
16 x 8 x 30.6	59.29	94.55	109.57	827.95	6.23	7.557	8.756	17.44	12.00
25.5	49.67	87.69	95.40	745.33	6.34	7.813	8.500	14.61	10.00
20.4	39.95	80.12	80.68	655.76	6.47	8.185	8.128	11.75	8.00
15.3	30.12	63.50	73.51	555.78	6.60	8.752	7.561	8.86	6.00
16 x 6 x 30.6	54.19	90.66	91.94	744.67	6.12	8.099	8.214	15.94	12.00
25.5	45.42	80.17	84.18	669.88	6.23	8.356	7.957	13.36	10.00
20.4	36.55	67.44	77.56	588.49	6.33	8.726	7.587	10.75	8.00
15.3	27.57	53.56	70.78	497.33	6.43	9.286	7.027	8.11	6.00
16 x 4 x 30.6	49.09	74.20	85.43	647.79	5.94	8.731	7.582	14.44	12.00
25.5	41.17	64.86	79.49	582.66	6.03	8.983	7.330	12.11	10.00
20.4	33.15	54.72	73.40	511.37	6.12	9.346	6.967	9.75	8.00
15.3	25.02	43.58	67.13	431.10	6.18	9.891	6.422	7.36	6.00
15 x 12 x 30.6	66.94	91.35	133.35	830.17	5.93	6.226	9.087	19.69	11.25
25.5	56.05	84.85	116.08	750.65	6.07	6.466	8.847	16.48	9.37
20.4	45.05	78.22	97.43	664.39	6.22	6.819	8.494	13.25	7.50
15.3	33.95	71.44	77.11	567.87	6.39	7.364	7.949	9.98	5.62
15 x 11 x 30.6	64.39	90.34	125.22	803.63	5.93	6.418	8.895	18.94	11.25
25.5	53.92	83.93	109.03	726.21	6.06	6.661	8.652	15.86	9.37
20.4	43.35	77.40	91.53	642.15	6.21	7.016	8.297	12.75	7.50
15.3	32.67	70.71	72.46	548.02	6.37	7.563	7.750	9.61	5.62
15 x 10 x 30.6	61.84	89.21	117.07	775.28	5.92	6.623	8.690	18.19	11.25
25.5	51.80	82.91	101.95	700.18	6.05	6.868	8.445	15.23	9.37
20.4	41.65	76.48	85.61	618.55	6.19	7.225	8.088	12.25	7.50
15.3	31.40	67.80	69.90	527.03	6.33	7.773	7.540	9.23	5.62
15 x 9 x 30.6	59.29	87.94	108.88	744.94	5.91	6.842	8.471	17.44	11.25
25.5	49.67	81.76	94.85	672.39	6.02	7.089	8.224	14.61	9.37
20.4	39.95	75.45	79.68	593.43	6.15	7.448	7.865	11.75	7.50
15.3	30.12	63.13	68.99	504.81	6.29	7.996	7.317	8.86	5.62
15 x 8 x 30.6	56.74	86.50	100.66	712.40	5.88	7.077	8.236	16.69	11.25
25.5	47.55	80.46	87.73	642.67	5.99	7.326	7.987	13.98	9.37
20.4	38.25	73.73	74.29	566.66	6.11	7.685	7.628	11.25	7.50
15.3	28.85	58.46	67.97	481.25	6.23	8.232	7.081	8.48	5.62



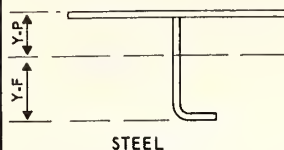
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	84.86	92.41	677.40	5.84	7.331	7.982	15.94	11.25
25.5	45.42	78.98	80.58	610.79	5.95	7.580	7.733	13.36	9.37
20.4	36.55	67.78	72.97	538.07	6.06	7.939	7.374	10.75	7.50
15.3	27.57	53.78	66.80	456.22	6.16	8.483	6.830	8.11	5.62
15 x 6 x 30.6	51.64	82.97	84.12	639.65	5.79	7.604	7.709	15.19	11.25
25.5	43.30	73.42	77.28	576.53	5.88	7.852	7.461	12.73	9.37
20.4	34.85	61.81	71.44	507.45	5.99	8.210	7.103	10.25	7.50
15.3	26.30	49.09	65.46	429.58	6.07	8.750	6.563	7.73	5.62
15 x 5 x 30.6	49.09	75.81	80.77	598.82	5.71	7.899	7.414	14.44	11.25
25.5	41.17	66.24	75.29	539.59	5.80	8.146	7.167	12.11	9.37
20.4	33.15	55.83	69.68	474.60	5.89	8.501	6.812	9.75	7.50
15.3	25.02	44.40	63.90	401.17	5.96	9.035	6.278	7.36	5.62
15 x 4 x 30.6	46.54	67.46	78.17	554.52	5.61	8.220	7.093	13.69	11.25
25.5	39.05	59.03	72.96	499.65	5.70	8.464	6.849	11.48	9.37
20.4	31.45	49.83	67.60	439.25	5.78	8.815	6.498	9.25	7.50
15.3	23.75	39.70	62.07	370.80	5.83	9.339	5.974	6.98	5.62
14 x 10 x 30.6	59.29	81.13	107.30	661.23	5.56	6.163	8.150	17.44	10.50
25.5	49.67	75.65	93.55	598.65	5.68	6.399	7.914	14.61	8.75
20.4	39.95	70.04	78.63	530.20	5.82	6.743	7.570	11.75	7.00
15.3	30.12	62.30	64.30	452.88	5.95	7.269	7.044	8.86	5.25
14 x 9 x 30.6	56.74	80.00	99.66	635.16	5.55	6.373	7.940	16.69	10.50
25.5	47.55	74.62	86.92	574.67	5.67	6.612	7.701	13.98	8.75
20.4	38.25	69.12	73.08	508.42	5.79	6.957	7.356	11.25	7.00
15.3	28.85	57.93	63.48	433.50	5.91	7.484	6.829	8.48	5.25
14 x 8 x 30.6	54.19	78.71	91.99	607.12	5.53	6.600	7.713	15.94	10.50
25.5	45.42	73.45	80.26	548.95	5.64	6.840	7.473	13.36	8.75
20.4	36.55	67.51	68.07	485.14	5.75	7.186	7.127	10.75	7.00
15.3	27.57	53.55	62.54	412.91	5.86	7.711	6.602	8.11	5.25
14 x 7 x 30.6	51.64	77.24	84.29	576.89	5.50	6.844	7.469	15.19	10.50
25.5	43.30	72.12	73.58	521.30	5.60	7.085	7.228	12.73	8.75
20.4	34.85	61.94	66.87	460.23	5.70	7.431	6.882	10.25	7.00
15.3	26.30	49.16	61.48	390.99	5.79	7.953	6.360	7.73	5.25
14 x 6 x 30.6	49.09	75.53	76.55	544.18	5.45	7.109	7.204	14.44	10.50
25.5	41.17	66.88	70.58	491.50	5.54	7.349	6.964	12.11	8.75
20.4	33.15	56.35	65.49	433.49	5.63	7.694	6.619	9.75	7.00
15.3	25.02	44.77	60.25	367.62	5.71	8.212	6.101	7.36	5.25
14 x 5 x 30.6	46.54	68.78	73.54	508.69	5.38	7.395	6.918	13.69	10.50
25.5	39.05	60.16	68.77	459.28	5.46	7.634	6.679	11.48	8.75
20.4	31.45	50.74	63.87	404.73	5.54	7.976	6.337	9.25	7.00
15.3	23.75	40.37	58.82	342.64	5.61	8.488	5.825	6.98	5.25
14 x 4 x 30.6	43.99	60.98	71.16	470.05	5.28	7.708	6.605	12.94	10.50
25.5	36.92	53.42	66.63	424.34	5.36	7.944	6.369	10.86	8.75
20.4	29.75	45.13	61.95	373.69	5.43	8.281	6.032	8.75	7.00
15.3	22.47	35.96	57.13	315.88	5.48	8.783	5.530	6.61	5.25
13 x 9 x 30.6	54.19	72.32	90.68	535.64	5.19	5.907	7.406	15.94	9.75
25.5	45.42	67.70	79.19	485.87	5.30	6.136	7.177	13.36	8.12
20.4	36.55	62.96	66.64	430.98	5.42	6.467	6.846	10.75	6.50
15.3	27.57	52.85	58.08	368.38	5.53	6.970	6.343	8.11	4.87
13 x 8 x 30.6	51.64	71.18	83.57	511.76	5.18	6.124	7.189	15.19	9.75
25.5	43.30	66.66	73.00	463.86	5.28	6.354	6.959	12.73	8.12
20.4	34.85	61.46	62.02	410.96	5.39	6.687	6.626	10.25	6.50
15.3	26.30	48.77	57.24	350.57	5.49	7.189	6.124	7.73	4.87

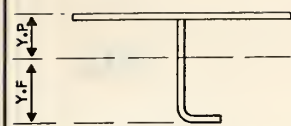


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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12.75 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
13 x 7 x 30.6	49.09	69.87	76.42	485.92	5.15	6.359	6.954	14.44	9.75
25.5	41.17	65.47	66.79	440.14	5.24	6.590	6.723	12.11	8.12
20.4	33.15	56.26	60.94	389.48	5.34	6.922	6.391	9.75	6.50
15.3	25.02	44.68	56.28	331.57	5.42	7.422	5.891	7.36	4.87
13 x 6 x 30.6	46.54	68.35	69.23	457.89	5.10	6.614	6.699	13.69	9.75
25.5	39.05	60.55	64.08	414.49	5.19	6.845	6.468	11.48	8.12
20.4	31.45	51.06	59.69	366.36	5.28	7.176	6.137	9.25	6.50
15.3	23.75	40.58	55.16	311.27	5.34	7.670	5.643	6.98	4.87
13 x 5 x 30.6	43.99	62.01	66.55	427.36	5.04	6.891	6.422	12.94	9.75
25.5	36.92	54.30	62.45	386.67	5.12	7.121	6.192	10.86	8.12
20.4	29.75	45.83	58.22	341.42	5.19	7.449	5.864	8.75	6.50
15.3	22.47	36.48	53.85	289.51	5.24	7.937	5.376	6.61	4.87
13 x 4 x 30.6	41.44	54.76	64.40	394.00	4.95	7.195	6.118	12.19	9.75
25.5	34.80	48.02	60.50	356.39	5.02	7.422	5.891	10.23	8.12
20.4	28.05	40.60	56.47	314.43	5.08	7.745	5.568	8.25	6.50
15.3	21.20	32.37	52.29	266.16	5.12	8.223	5.090	6.23	4.87
12 x 9 x 30.6	51.64	64.92	81.94	446.00	4.83	5.443	6.870	15.19	9.00
25.5	43.30	61.00	71.66	405.70	4.94	5.662	6.651	12.73	7.50
20.4	34.85	56.96	60.37	360.88	5.05	5.978	6.335	10.25	6.00
15.3	26.30	47.90	52.81	309.27	5.15	6.456	5.857	7.73	4.50
12 x 8 x 30.6	49.09	63.92	75.38	425.92	4.82	5.650	6.663	14.44	9.00
25.5	41.17	60.08	65.94	387.09	4.91	5.870	6.443	12.11	7.50
20.4	33.15	55.57	56.14	343.86	5.02	6.187	6.126	9.75	6.00
15.3	25.02	44.12	52.06	294.04	5.11	6.665	5.648	7.36	4.50
12 x 7 x 30.6	46.54	62.77	68.79	404.12	4.79	5.875	6.438	13.69	9.00
25.5	39.05	59.03	60.20	366.98	4.88	6.096	6.217	11.48	7.50
20.4	31.45	50.77	55.18	325.55	4.97	6.413	5.900	9.25	6.00
15.3	23.75	40.33	51.20	277.76	5.05	6.888	5.425	6.98	4.50
12 x 6 x 30.6	43.99	61.42	62.16	380.39	4.75	6.119	6.194	12.94	9.00
25.5	36.92	54.44	57.80	345.17	4.83	6.341	5.972	10.86	7.50
20.4	29.75	45.94	54.06	305.80	4.91	6.656	5.657	8.75	6.00
15.3	22.47	36.53	50.19	260.32	4.97	7.126	5.187	6.61	4.50
12 x 5 x 30.6	41.44	55.50	59.81	354.46	4.69	6.387	5.926	12.19	9.00
25.5	34.80	48.65	56.33	321.44	4.77	6.607	5.706	10.23	7.50
20.4	28.05	41.11	52.74	284.43	4.84	6.920	5.393	8.25	6.00
15.3	21.20	32.72	49.00	241.59	4.88	7.383	4.930	6.23	4.50
12 x 4 x 30.6	38.89	48.80	57.88	325.99	4.61	6.681	5.632	11.44	9.00
25.5	32.67	42.84	54.57	295.51	4.67	6.898	5.415	9.61	7.50
20.4	26.35	36.25	51.14	261.22	4.73	7.205	5.108	7.75	6.00
15.3	19.92	28.91	47.58	221.43	4.76	7.659	4.654	5.86	4.50
11 x 8 x 25.5	39.05	53.72	59.08	318.33	4.55	5.388	5.925	11.48	6.87
22.95	35.29	52.10	54.62	301.67	4.59	5.523	5.790	10.38	6.19
20.4	31.45	49.86	50.42	283.59	4.64	5.688	5.625	9.25	5.50
17.85	27.64	44.91	48.74	264.41	4.69	5.888	5.425	8.13	4.82
15.3	23.75	39.60	46.99	243.13	4.72	6.139	5.174	6.98	4.12
11 x 7 x 25.5	36.92	52.80	53.82	301.53	4.52	5.602	5.711	10.86	6.87
22.95	33.38	49.77	51.22	285.56	4.56	5.737	5.576	9.82	6.19
20.4	29.75	45.44	49.58	268.21	4.60	5.903	5.410	8.75	5.50
17.85	26.15	40.94	47.93	249.80	4.64	6.102	5.211	7.69	4.82
15.3	22.47	36.11	46.23	229.37	4.67	6.351	4.962	6.61	4.12
11 x 6 x 25.5	34.80	48.53	51.72	283.25	4.47	5.836	5.477	10.23	6.87
22.95	31.46	44.90	50.18	268.06	4.51	5.971	5.342	9.25	6.19
20.4	28.05	41.00	48.59	251.57	4.55	6.135	5.178	8.25	5.50



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

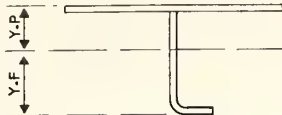
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STEEL

12.75 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ⁴
11 x 6 x 17.85	24.66	36.96	46.99	234.04	4.58	6.332	4.981	7.25	4.82
15.3	21.20	32.62	45.33	214.59	4.60	6.579	4.734	6.23	4.12
11 x 5 x 25.5	32.67	43.22	50.42	263.28	4.41	6.091	5.222	9.61	6.87
22.95	29.55	40.00	48.94	249.01	4.44	6.225	5.088	8.69	6.19
20.4	26.35	36.55	47.41	233.50	4.47	6.388	4.925	7.75	5.50
17.85	23.17	32.97	45.86	217.00	4.50	6.582	4.731	6.82	4.82
15.3	19.92	29.11	44.26	198.68	4.51	6.824	4.489	5.86	4.12
11 x 4 x 25.5	30.55	37.89	48.84	241.38	4.33	6.371	4.942	8.98	6.87
22.95	27.64	35.09	47.44	228.18	4.35	6.503	4.810	8.13	6.19
20.4	24.65	32.09	45.97	213.81	4.38	6.662	4.651	7.25	5.50
17.85	21.69	28.97	44.50	198.51	4.39	6.852	4.461	6.38	4.82
15.3	18.65	25.60	42.97	181.50	4.39	7.089	4.224	5.48	4.12
10 x 8 x 25.5	36.92	47.58	52.43	257.25	4.17	4.906	5.407	10.86	6.25
22.95	33.38	46.25	48.51	244.18	4.22	5.033	5.280	9.82	5.63
20.4	29.75	44.31	44.87	229.91	4.26	5.189	5.124	8.75	5.00
17.85	26.15	39.93	43.49	214.67	4.30	5.376	4.937	7.69	4.38
15.3	22.47	35.22	42.04	197.66	4.33	5.612	4.701	6.61	3.75
10 x 7 x 25.5	34.80	46.79	47.65	243.46	4.15	5.109	5.204	10.23	6.25
22.95	31.46	44.10	45.49	230.91	4.19	5.237	5.076	9.25	5.63
20.4	28.05	40.28	44.14	217.20	4.23	5.392	4.921	8.25	5.00
17.85	24.66	36.31	42.78	202.56	4.26	5.579	4.734	7.25	4.38
15.3	21.20	32.04	41.37	186.22	4.28	5.812	4.501	6.23	3.75
10 x 6 x 25.5	32.67	42.84	45.84	228.40	4.11	5.331	4.982	9.61	6.25
22.95	29.55	39.66	44.58	216.45	4.14	5.458	4.855	8.69	5.63
20.4	26.35	36.24	43.27	203.40	4.18	5.613	4.700	7.75	5.00
17.85	23.17	32.68	41.96	189.46	4.20	5.797	4.516	6.82	4.38
15.3	19.92	28.85	40.58	173.89	4.22	6.028	4.285	5.86	3.75
10 x 5 x 25.5	30.55	38.01	44.71	211.87	4.05	5.574	4.739	8.98	6.25
22.95	27.64	35.20	43.49	200.65	4.08	5.700	4.613	8.13	5.63
20.4	24.65	32.19	42.23	188.37	4.11	5.853	4.460	7.25	5.00
17.85	21.69	29.04	40.96	175.24	4.13	6.035	4.278	6.38	4.38
15.3	18.65	25.65	39.63	160.59	4.13	6.261	4.052	5.48	3.75
10 x 4 x 25.5	28.42	33.15	43.32	193.67	3.97	5.842	4.471	8.36	6.25
22.95	25.72	30.73	42.16	183.29	4.00	5.965	4.348	7.57	5.63
20.4	22.95	28.11	40.96	171.93	4.01	6.115	4.198	6.75	5.00
17.85	20.20	25.39	39.74	159.76	4.03	6.293	4.020	5.94	4.38
15.3	17.37	22.44	38.47	146.18	4.02	6.513	3.800	5.11	3.75
9 x 6 x 25.5	30.55	37.37	40.18	180.31	3.74	4.825	4.488	8.98	5.62
20.4	24.65	31.66	38.12	161.06	3.80	5.088	4.225	7.25	4.50
15.3	18.65	25.22	35.94	138.03	3.83	5.473	3.840	5.48	3.37
10.2	12.54	17.93	33.58	108.86	3.78	6.071	3.242	3.69	2.25
9 x 5 x 25.5	28.42	33.02	39.20	166.91	3.69	5.055	4.258	8.36	5.62
20.4	22.95	28.00	37.21	148.80	3.74	5.315	3.998	6.75	4.50
15.3	17.37	22.33	35.11	127.11	3.75	5.692	3.621	5.11	3.37
10.2	11.69	15.90	32.81	99.72	3.68	6.274	3.039	3.44	2.25
9 x 4 x 25.5*	26.30	28.64	37.99	152.08	3.61	5.310	4.003	7.73	5.62
20.4*	21.25	24.32	36.09	135.33	3.65	5.564	3.749	6.25	4.50
15.3*	16.10	19.43	34.08	115.25	3.65	5.931	3.382	4.73	3.37
10.2*	10.34	13.86	31.86	89.93	3.56	6.470	2.823	3.19	2.25
8 x 6 x 25.5*	28.42	32.10	34.72	138.67	3.36	4.319	3.994	8.36	5.00
20.4*	22.95	27.25	33.12	124.28	3.41	4.561	3.752	6.75	4.00
15.3	17.37	21.74	31.41	106.80	3.44	4.913	3.400	5.11	3.00
10.2	11.69	15.46	29.52	84.34	3.39	5.456	2.857	3.44	2.00

*Indicates similarity to (L) shape.



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

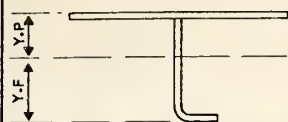
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STEEL

12.75 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
8 x 5 x 25.5	26.30	28.25	33.89	128.07	3.32	4.534	3.779	7.73	5.00
20.4	21.25	24.00	32.35	114.52	3.36	4.773	3.540	6.25	4.00
15.3	16.10	19.16	30.69	98.05	3.37	5.118	3.195	4.73	3.00
10.2	10.84	13.64	28.84	76.98	3.29	5.644	2.669	3.19	2.00
8 x 4 x 25.5*	24.17	24.36	32.85	116.28	3.25	4.774	3.539	7.11	5.00
20.4*	19.55	20.72	31.38	103.75	3.28	5.007	3.306	5.75	4.00
15.3	14.82	16.57	29.79	88.52	3.27	5.341	2.972	4.36	3.00
10.2	9.99	11.82	27.99	69.09	3.17	5.845	2.468	2.94	2.00

*Indicates similarity to (L) shape.



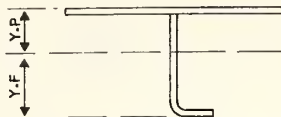
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

14.02 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 20 x 30.6	102.64	171.96	300.92	2,335.60	8.18	7.762	13.582	30.19	15.75
25.5	85.80	158.26	260.34	2,100.85	8.37	8.069	13.275	25.23	13.12
20.4	68.85	144.38	217.25	1,851.33	8.61	8.522	12.822	20.25	10.50
17.85	60.40	137.43	194.78	1,719.81	8.74	8.830	12.514	17.77	9.20
21 x 18 x 30.6	97.54	169.80	278.02	2,250.01	8.21	8.093	13.251	28.69	15.75
25.5	81.55	156.32	240.55	2,022.32	8.39	8.407	12.937	23.98	13.12
20.4	65.45	142.66	200.76	1,780.03	8.62	8.867	12.477	19.25	10.50
17.85	57.43	135.81	180.01	1,652.21	8.74	9.179	12.165	16.89	9.20
21 x 16 x 30.6	92.44	167.31	255.02	2,156.39	8.22	8.456	12.888	27.19	15.75
25.5	77.30	154.09	220.69	1,936.65	8.40	8.776	12.568	22.73	13.12
20.4	62.05	140.68	184.23	1,702.53	8.61	9.242	12.102	18.25	10.50
17.85	54.45	133.95	165.21	1,578.91	8.72	9.557	11.787	16.01	9.20
21 x 14 x 30.6	87.34	164.42	231.93	2,053.54	8.22	8.854	12.490	25.69	15.75
25.5	73.05	151.49	200.76	1,842.81	8.38	9.179	12.165	21.48	13.12
20.4	58.65	138.37	167.66	1,617.99	8.58	9.651	11.693	17.25	10.50
17.85	51.47	131.79	150.39	1,499.14	8.69	9.969	11.375	15.14	9.20
21 x 12 x 30.6	82.24	161.00	208.74	1,940.04	8.19	9.294	12.050	24.19	15.75
25.5	68.80	148.42	180.77	1,739.58	8.35	9.623	11.721	20.23	13.12
20.4	55.25	135.65	151.05	1,525.38	8.53	10.099	11.245	16.25	10.50
17.85	48.49	129.24	135.53	1,412.02	8.62	10.418	10.926	14.26	9.20
21 x 10 x 30.6	77.14	156.90	185.46	1,814.11	8.13	9.782	11.562	22.69	15.75
25.5	64.55	144.74	160.72	1,625.47	8.28	10.114	11.230	18.98	13.12
20.4	51.85	132.39	134.40	1,423.51	8.44	10.591	10.753	15.25	10.50
17.85	45.51	120.65	126.19	1,316.48	8.52	10.911	10.433	13.39	9.20
21 x 8 x 30.6	72.04	151.90	162.07	1,673.63	8.04	10.326	11.018	21.19	15.75
25.5	60.30	140.26	140.60	1,498.67	8.17	10.659	10.685	17.73	13.12
20.4	48.45	117.72	128.42	1,310.91	8.31	11.136	10.208	14.25	10.50
17.85	42.53	105.74	122.48	1,211.23	8.38	11.455	9.889	12.51	9.20
21 x 6 x 30.6	66.94	138.59	145.67	1,515.89	7.88	10.938	10.406	19.69	15.75
25.5	56.05	120.42	134.68	1,356.93	8.00	11.269	10.075	16.48	13.12
20.4	45.05	100.99	123.49	1,185.79	8.12	11.742	9.602	13.25	10.50
17.85	39.56	90.80	117.86	1,094.71	8.18	12.056	9.288	11.63	9.20
18 x 18 x 30.6	89.89	136.67	231.26	1,575.83	7.11	6.814	11.530	26.44	13.50
25.5	75.17	126.75	200.57	1,424.73	7.29	7.103	11.241	22.11	11.25
20.4	60.35	116.66	167.70	1,262.09	7.49	7.526	10.818	17.75	9.00
15.3	45.42	106.40	132.21	1,081.46	7.73	8.180	10.164	13.36	6.75
18 x 16 x 30.6	84.79	134.81	211.55	1,510.42	7.14	7.140	11.204	24.94	13.50
25.5	70.92	125.06	183.49	1,364.23	7.30	7.435	10.909	20.86	11.25
20.4	56.95	115.14	153.43	1,206.67	7.49	7.864	10.480	16.75	9.00
15.3	42.87	105.05	120.99	1,031.47	7.71	8.526	9.818	12.61	6.75
18 x 14 x 30.6	79.69	132.61	191.74	1,438.05	7.14	7.500	10.844	23.44	13.50
25.5	66.67	123.07	166.33	1,297.52	7.30	7.801	10.543	19.61	11.25
20.4	53.55	113.36	139.12	1,145.84	7.48	8.236	10.108	15.75	9.00
15.3	40.32	103.47	109.74	976.96	7.67	8.902	9.442	11.86	6.75
18 x 12 x 30.6	74.59	129.99	171.83	1,357.55	7.13	7.901	10.443	21.94	13.50
25.5	62.42	120.70	149.11	1,223.59	7.28	8.206	10.138	18.36	11.25
20.4	50.15	111.24	124.77	1,078.77	7.44	8.646	9.698	14.75	9.00
15.3	37.77	98.47	101.59	917.29	7.61	9.315	9.029	11.11	6.75
18 x 10 x 30.6	69.49	126.81	151.81	1,267.47	7.10	8.349	9.995	20.44	13.50
25.5	58.17	117.82	131.81	1,141.21	7.23	8.658	9.686	17.11	11.25
20.4	46.75	108.66	110.37	1,004.44	7.37	9.100	9.244	13.75	9.00
15.3	35.22	87.19	99.32	851.69	7.51	9.769	8.575	10.36	6.75



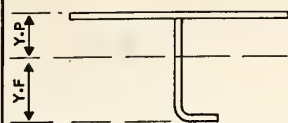
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

14.02 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 8 x 30.6	64.39	122.87	131.68	1,165.97	7.02	8.855	9.489	18.94	13.50
25.5	53.92	114.26	114.44	1,048.82	7.14	9.165	9.179	15.86	11.25
20.4	43.35	95.93	105.48	921.61	7.26	9.607	8.737	12.75	9.00
15.3	32.67	75.88	96.51	779.23	7.37	10.270	8.074	9.61	6.75
18 x 6 x 30.6	59.29	111.45	117.85	1,050.75	6.88	9.428	8.916	17.44	13.50
25.5	49.67	97.00	109.73	944.50	6.99	9.737	8.607	14.61	11.25
20.4	39.95	81.45	101.44	828.73	7.09	10.174	8.170	11.75	9.00
15.3	30.12	64.55	92.95	698.78	7.17	10.826	7.518	8.86	6.75
18 x 4 x 30.6	54.19	91.11	111.25	918.82	6.67	10.085	8.259	15.94	13.50
25.5	45.42	79.49	103.79	825.77	6.76	10.388	7.956	13.36	11.25
20.4	36.55	66.93	96.15	723.86	6.84	10.815	7.529	10.75	9.00
15.3	27.57	53.19	88.29	608.93	6.89	11.447	6.897	8.11	6.75
16 x 12 x 30.6	69.49	110.68	148.39	1,036.15	6.42	6.982	9.362	20.44	12.00
25.5	58.17	103.33	128.98	937.65	6.55	7.270	9.074	17.11	10.00
20.4	46.75	95.83	108.06	830.09	6.70	7.682	8.662	13.75	8.00
15.3	35.22	85.32	88.17	708.67	6.85	8.306	8.038	10.36	6.00
16 x 10 x 30.6	64.39	108.07	130.58	966.44	6.39	7.401	8.943	18.94	12.00
25.5	53.92	100.95	113.55	873.43	6.51	7.692	8.652	15.86	10.00
20.4	43.35	93.69	95.18	771.68	6.64	8.107	8.237	12.75	8.00
15.3	32.67	75.21	86.25	656.64	6.77	8.731	7.613	9.61	6.00
16 x 8 x 30.6	59.29	104.79	112.65	887.31	6.33	7.876	8.468	17.44	12.00
25.5	49.67	97.97	98.05	800.92	6.44	8.169	8.175	14.61	10.00
20.4	39.95	82.27	91.00	706.18	6.55	8.584	7.760	11.75	8.00
15.3	30.12	65.08	83.85	598.87	6.64	9.202	7.142	8.86	6.00
16 x 6 x 30.6	54.19	94.61	100.55	796.70	6.21	8.421	7.923	15.94	12.00
25.5	45.42	82.46	94.13	718.40	6.30	8.712	7.632	13.36	10.00
20.4	36.55	69.31	87.54	632.22	6.39	9.122	7.222	10.75	8.00
15.3	27.57	54.93	80.77	534.36	6.45	9.729	6.615	8.11	6.00
16 x 4 x 30.6	49.09	76.45	94.87	691.93	6.01	9.050	7.294	14.44	12.00
25.5	41.17	66.81	88.98	623.63	6.09	9.335	7.009	12.11	10.00
20.4	33.15	56.30	82.92	548.04	6.15	9.735	6.609	9.75	8.00
15.3	25.02	44.75	76.67	461.84	6.18	10.320	6.024	7.36	6.00
15 x 12 x 30.6	66.94	101.44	137.03	894.37	6.05	6.527	8.817	19.69	11.25
25.5	56.05	94.98	119.21	811.14	6.18	6.804	8.540	16.48	9.37
20.4	45.05	88.39	99.94	719.72	6.33	7.201	8.143	13.25	7.50
15.3	33.95	78.93	81.64	615.77	6.47	7.801	7.543	9.98	5.62
15 x 11 x 30.6	64.39	100.33	128.69	865.05	6.05	6.722	8.622	18.94	11.25
25.5	53.92	93.97	111.98	783.98	6.17	7.001	8.343	15.86	9.37
20.4	43.35	87.47	93.90	694.86	6.30	7.400	7.944	12.75	7.50
15.3	32.67	74.18	80.81	593.45	6.43	8.000	7.344	9.61	5.62
15 x 10 x 30.6	61.84	99.09	120.33	833.81	6.03	6.930	8.414	18.19	11.25
25.5	51.80	92.84	104.73	755.13	6.15	7.211	8.133	15.23	9.37
20.4	41.65	86.45	87.84	668.53	6.27	7.611	7.733	12.25	7.50
15.3	31.40	69.42	79.89	569.95	6.39	8.210	7.134	9.23	5.62
15 x 9 x 30.6	59.29	97.71	111.93	800.46	6.01	7.151	8.193	17.44	11.25
25.5	49.67	91.57	97.45	724.41	6.12	7.433	7.911	14.61	9.37
20.4	39.95	81.77	85.30	640.61	6.23	7.834	7.510	11.75	7.50
15.3	30.12	64.66	78.86	545.14	6.33	8.431	6.913	8.86	5.62
15 x 8 x 30.6	56.74	96.13	103.51	764.78	5.98	7.389	7.955	16.69	11.25
25.5	47.55	90.14	90.16	691.64	6.08	7.671	7.673	13.98	9.37
20.4	38.25	75.69	84.01	610.94	6.18	8.071	7.273	11.25	7.50
15.3	28.85	59.89	77.70	518.93	6.27	8.665	6.679	8.48	5.62



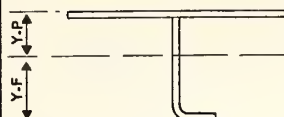
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

14.02 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	94.34	95.05	726.52	5.93	7.643	7.701	15.94	11.25
25.5	45.42	82.85	88.51	656.60	6.02	7.925	7.419	13.36	9.37
20.4	36.55	69.60	82.53	579.35	6.12	8.324	7.020	10.75	7.50
15.3	27.57	55.11	76.38	491.18	6.18	8.913	6.431	8.11	5.62
15 x 6 x 30.6	51.64	86.57	92.28	685.37	5.87	7.917	7.427	15.19	11.25
25.5	43.30	75.52	86.63	619.06	5.95	8.198	7.146	12.73	9.37
20.4	34.85	63.50	80.83	545.66	6.03	8.593	6.751	10.25	7.50
15.3	26.30	50.33	74.86	461.77	6.09	9.175	6.169	7.73	5.62
15 x 5 x 30.6	49.09	78.06	89.88	641.01	5.78	8.212	7.132	14.44	11.25
25.5	41.17	68.16	84.44	578.74	5.86	8.490	6.854	12.11	9.37
20.4	33.15	57.38	78.86	509.64	5.93	8.882	6.462	9.75	7.50
15.3	25.02	45.54	73.10	430.53	5.97	9.454	5.890	7.36	5.62
15 x 4 x 30.6	46.54	69.52	87.04	593.03	5.67	8.531	6.813	13.69	11.25
25.5	39.05	60.79	81.87	535.31	5.75	8.806	6.538	11.48	9.37
20.4	31.45	51.26	76.55	471.05	5.80	9.190	6.154	9.25	7.50
15.3	23.75	40.75	71.03	397.30	5.82	9.751	5.593	6.98	5.62
14 x 10 x 30.6	59.29	90.39	110.31	712.60	5.67	6.460	7.884	17.44	10.50
25.5	49.67	84.95	96.10	646.79	5.78	6.730	7.614	14.61	8.75
20.4	39.95	79.38	80.66	573.88	5.90	7.115	7.229	11.75	7.00
15.3	30.12	63.76	73.66	490.22	6.01	7.688	6.656	8.86	5.25
14 x 9 x 30.6	56.74	89.15	102.47	683.83	5.65	6.673	7.671	16.69	10.50
25.5	47.55	83.81	89.30	620.17	5.76	6.945	7.399	13.98	8.75
20.4	38.25	74.98	78.35	549.57	5.86	7.329	7.015	11.25	7.00
15.3	28.85	59.30	72.72	468.52	5.95	7.901	6.443	8.48	5.25
14 x 8 x 30.6	54.19	87.74	94.61	652.96	5.62	6.902	7.442	15.94	10.50
25.5	45.42	82.48	82.52	591.71	5.72	7.174	7.170	13.36	8.75
20.4	36.55	69.29	77.17	523.69	5.82	7.558	6.786	10.75	7.00
15.3	27.57	54.83	71.66	445.55	5.89	8.126	6.218	8.11	5.25
14 x 7 x 30.6	51.64	86.12	86.71	619.77	5.58	7.147	7.197	15.19	10.50
25.5	43.30	75.64	81.04	561.21	5.67	7.419	6.925	12.73	8.75
20.4	34.85	63.58	75.83	496.08	5.75	7.802	6.542	10.25	7.00
15.3	26.30	50.35	70.45	421.20	5.81	8.365	5.979	7.73	5.25
14 x 6 x 30.6	49.09	78.79	84.25	583.99	5.52	7.412	6.932	14.44	10.50
25.5	41.17	68.78	79.34	528.45	5.60	7.683	6.661	12.11	8.75
20.4	33.15	57.87	74.28	466.57	5.68	8.063	6.281	9.75	7.00
15.3	25.02	45.87	69.05	395.34	5.72	8.619	5.725	7.36	5.25
14 x 5 x 30.6	46.54	70.83	82.06	545.30	5.44	7.699	6.645	13.69	10.50
25.5	39.05	61.90	77.34	493.17	5.51	7.967	6.377	11.48	8.75
20.4	31.45	52.14	72.47	434.95	5.58	8.342	6.002	9.25	7.00
15.3	23.75	41.38	67.43	367.83	5.60	8.889	5.455	6.98	5.25
14 x 4 x 30.6	43.99	62.84	79.46	503.33	5.34	8.010	6.334	12.94	10.50
25.5	36.92	55.00	74.97	455.06	5.40	8.274	6.070	10.86	8.75
20.4	29.75	46.40	70.33	400.98	5.45	8.642	5.702	8.75	7.00
15.3	22.47	36.89	65.50	338.49	5.46	9.176	5.168	6.61	5.25
13 x 9 x 30.6	54.19	80.85	93.26	577.87	5.29	6.196	7.148	15.94	9.75
25.5	45.42	76.27	81.36	525.28	5.39	6.457	6.887	13.36	8.12
20.4	36.55	68.36	71.56	466.51	5.49	6.825	6.519	10.75	6.50
15.3	27.57	54.07	66.69	398.49	5.57	7.369	5.975	8.11	4.87
13 x 8 x 30.6	51.64	79.60	85.96	551.47	5.26	6.416	6.928	15.19	9.75
25.5	43.30	75.01	75.11	500.82	5.35	6.676	6.668	12.73	8.12
20.4	34.85	63.06	70.50	444.17	5.44	7.044	6.300	10.25	6.50
15.3	26.30	49.91	65.74	378.56	5.51	7.585	5.759	7.73	4.87



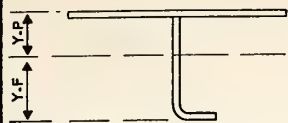
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

14.02 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
13 x 7 x 30.6	49.09	78.15	78.62	522.99	5.22	6.652	6.692	14.44	9.75
25.5	41.17	68.65	73.79	474.55	5.31	6.913	6.431	12.11	8.12
20.4	33.15	57.74	69.29	420.28	5.39	7.279	6.065	9.75	6.50
15.3	25.02	45.73	64.64	357.40	5.44	7.815	5.529	7.36	4.87
13 x 6 x 30.6	46.54	71.26	76.47	492.20	5.17	6.908	6.436	13.69	9.75
25.5	39.05	62.26	72.24	446.25	5.25	7.167	6.177	11.48	8.12
20.4	31.45	52.42	67.88	394.69	5.31	7.530	5.814	9.25	6.50
15.3	23.75	41.55	63.36	334.88	5.35	8.059	5.285	6.98	4.87
13 x 5 x 30.6	43.99	63.86	74.49	458.80	5.10	7.185	6.159	12.94	9.75
25.5	36.92	55.86	70.43	415.69	5.16	7.442	5.902	10.86	8.12
20.4	29.75	47.08	66.23	367.20	5.22	7.800	5.544	8.75	6.50
15.3	22.47	37.37	61.87	310.87	5.24	8.319	5.025	6.61	4.87
13 x 4 x 30.6	41.44	56.43	72.12	422.45	5.00	7.487	5.857	12.19	9.75
25.5	34.80	49.43	68.26	382.58	5.06	7.739	5.605	10.23	8.12
20.4	28.05	41.73	64.26	337.59	5.10	8.091	5.253	8.25	6.50
15.3	21.20	33.18	60.09	285.22	5.10	8.597	4.747	6.23	4.87
12 x 9 x 30.6	51.64	72.82	84.28	482.23	4.92	5.722	6.622	15.19	9.00
25.5	43.30	68.94	73.61	439.43	5.02	5.969	6.375	12.73	7.50
20.4	34.85	61.91	64.93	391.20	5.11	6.319	6.025	10.25	6.00
15.3	26.30	48.99	60.78	334.84	5.18	6.835	5.509	7.73	4.50
12 x 8 x 30.6	49.09	71.71	77.55	459.92	4.90	5.931	6.413	14.44	9.00
25.5	41.17	67.75	67.91	418.67	4.99	6.179	6.165	12.11	7.50
20.4	33.15	57.00	63.99	372.14	5.07	6.529	5.815	9.75	6.00
15.3	25.02	45.13	59.92	317.75	5.13	7.041	5.303	7.36	4.50
12 x 7 x 30.6	46.54	70.44	70.78	435.79	4.86	6.157	6.187	13.69	9.00
25.5	39.05	61.87	66.73	396.31	4.94	6.405	5.939	11.48	7.50
20.4	31.45	52.08	62.91	351.71	5.02	6.753	5.591	9.25	6.00
15.3	23.75	41.26	58.93	299.57	5.06	7.261	5.083	6.98	4.50
12 x 6 x 30.6	43.99	63.98	68.94	409.62	4.81	6.402	5.942	12.94	9.00
25.5	36.92	55.97	65.36	372.15	4.89	6.650	5.694	10.86	7.50
20.4	29.75	47.15	61.65	329.77	4.95	6.995	5.349	8.75	6.00
15.3	22.47	37.38	57.78	280.18	4.97	7.495	4.849	6.61	4.50
12 x 5 x 30.6	41.44	57.14	67.17	381.13	4.75	6.670	5.674	12.19	9.00
25.5	34.80	50.04	63.72	345.99	4.81	6.914	5.430	10.23	7.50
20.4	28.05	42.20	60.15	306.14	4.86	7.254	5.090	8.25	6.00
15.3	21.20	33.50	56.41	259.47	4.86	7.745	4.599	6.23	4.50
12 x 4 x 30.6	38.89	50.28	65.03	350.00	4.65	6.962	5.382	11.44	9.00
25.5	32.67	44.09	61.75	317.54	4.71	7.202	5.142	9.61	7.50
20.4	26.35	37.24	58.35	280.61	4.74	7.535	4.809	7.75	6.00
15.3	19.92	29.62	54.78	237.29	4.73	8.012	4.332	5.86	4.50
11 x 8 x 25.5	39.05	60.70	60.93	344.94	4.61	5.682	5.662	11.48	6.87
22.95	35.29	56.07	59.32	326.97	4.65	5.832	5.512	10.38	6.19
20.4	31.45	51.12	57.65	307.34	4.69	6.013	5.331	9.25	5.50
17.85	27.64	45.98	55.97	286.37	4.72	6.228	5.116	8.13	4.82
15.3	23.75	40.48	54.22	262.94	4.74	6.495	4.849	6.98	4.12
11 x 7 x 25.5	36.92	55.30	59.89	326.17	4.57	5.898	5.446	10.86	6.87
22.95	33.38	51.09	58.32	308.94	4.61	6.046	5.298	9.82	6.19
20.4	29.75	46.59	56.69	290.11	4.64	6.226	5.118	8.75	5.50
17.85	26.15	41.93	55.05	269.99	4.66	6.439	4.905	7.69	4.82
15.3	22.47	36.93	53.34	247.53	4.67	6.703	4.641	6.61	4.12
11 x 6 x 25.5	34.80	49.88	58.67	305.84	4.52	6.131	5.213	10.23	6.87
22.95	31.46	46.10	57.14	289.46	4.55	6.279	5.065	9.25	6.19
20.4	28.05	42.06	55.56	271.55	4.57	6.457	4.887	8.25	5.50



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

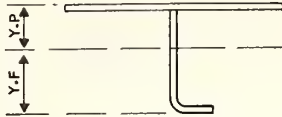
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STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
11 x 6 x 17.85	24.66	37.86	53.97	252.42	4.59	6.667	4.677	7.25	4.82
15.3	21.20	33.36	52.30	231.06	4.59	6.926	4.418	6.23	4.12
11 x 5 x 25.5	32.67	44.44	57.21	283.74	4.45	6.385	4.959	9.61	6.87
22.95	29.55	41.09	55.74	268.35	4.47	6.530	4.814	8.69	6.19
20.4	26.35	37.51	54.22	251.51	4.49	6.705	4.639	7.75	5.50
17.85	23.17	33.79	52.68	233.51	4.50	6.911	4.433	6.82	4.82
15.3	19.92	29.79	51.07	213.42	4.49	7.165	4.179	5.86	4.12
11 x 4 x 25.5	30.55	38.98	55.44	259.62	4.35	6.661	4.683	8.98	6.87
22.95	27.64	36.07	54.05	245.39	4.37	6.804	4.540	8.13	6.19
20.4	24.65	32.95	52.59	229.80	4.38	6.975	4.369	7.25	5.50
17.85	21.69	29.70	51.12	213.11	4.38	7.175	4.169	6.38	4.82
15.3	18.65	26.21	49.58	194.49	4.36	7.421	3.923	5.48	4.12
10 x 8 x 25.5	36.92	53.86	54.15	279.31	4.23	5.186	5.158	10.86	6.25
22.95	33.38	49.78	52.83	265.12	4.27	5.326	5.018	9.82	5.63
20.4	29.75	45.41	51.46	249.52	4.30	5.495	4.849	8.75	5.00
17.85	26.15	40.86	50.08	232.77	4.33	5.696	4.648	7.69	4.38
15.3	22.47	35.98	48.64	213.94	4.34	5.945	4.399	6.61	3.75
10 x 7 x 25.5	34.80	48.95	53.25	263.83	4.20	5.389	4.955	10.23	6.25
22.95	31.46	45.25	51.96	250.20	4.23	5.529	4.815	9.25	5.63
20.4	28.05	41.29	50.62	235.23	4.26	5.697	4.647	8.25	5.00
17.85	24.66	37.17	49.27	219.14	4.28	5.896	4.448	7.25	4.38
15.3	21.20	32.74	47.85	201.08	4.28	6.142	4.202	6.23	3.75
10 x 6 x 25.5	32.67	44.02	52.18	247.00	4.15	5.611	4.733	9.61	6.25
22.95	29.55	40.71	50.93	234.04	4.18	5.749	4.595	8.69	5.63
20.4	26.35	37.15	49.63	219.79	4.20	5.915	4.429	7.75	5.00
17.85	23.17	33.46	48.31	204.48	4.21	6.112	4.232	6.82	4.38
15.3	19.92	29.48	46.93	187.30	4.21	6.353	3.991	5.86	3.75
10 x 5 x 25.5	30.55	39.07	50.90	228.64	4.08	5.852	4.492	8.98	6.25
22.95	27.64	36.15	49.69	216.45	4.10	5.988	4.356	8.13	5.63
20.4	24.65	33.01	48.44	203.06	4.12	6.152	4.192	7.25	5.00
17.85	21.69	29.74	47.17	188.66	4.12	6.344	4.000	6.38	4.38
15.3	18.65	26.22	45.83	172.52	4.11	6.579	3.765	5.48	3.75
10 x 4 x 25.5	28.42	34.09	49.32	208.52	3.99	6.117	4.227	8.36	6.25
22.95	25.72	31.56	48.18	197.26	4.01	6.250	4.094	7.57	5.63
20.4	22.95	28.85	46.98	184.87	4.01	6.409	3.935	6.75	5.00
17.85	20.20	26.01	45.76	171.55	4.01	6.595	3.749	5.94	4.38
15.3	17.37	22.95	44.48	156.61	3.99	6.823	3.521	5.11	3.75
9 x 6 x 25.5	30.55	38.38	45.90	195.32	3.77	5.088	4.256	8.98	5.62
20.4	24.65	32.44	43.85	174.22	3.81	5.371	3.973	7.25	4.50
15.3	18.65	25.76	41.66	148.73	3.82	5.774	3.570	5.48	3.37
10.2	12.54	18.23	39.22	116.30	3.72	6.379	2.965	3.69	2.25
9 x 5 x 25.5	28.42	33.92	44.78	180.36	3.71	5.316	4.028	8.36	5.62
20.4	22.95	28.70	42.81	160.52	3.74	5.594	3.750	6.75	4.50
15.3	17.37	22.81	40.68	136.57	3.73	5.987	3.357	5.11	3.37
10.2	11.69	16.17	38.30	106.22	3.61	6.570	2.774	3.44	2.25
9 x 4 x 25.5*	26.30	29.44	43.40	163.90	3.63	5.567	3.777	7.73	5.62
20.4*	21.25	24.94	41.52	145.58	3.64	5.837	3.507	6.25	4.50
15.3	16.10	19.86	39.48	123.45	3.61	6.217	3.127	4.73	3.37
10.2	10.84	14.10	37.16	95.51	3.47	6.774	2.570	3.19	2.25
8 x 6 x 25.5*	28.42	32.97	39.81	150.47	3.39	4.564	3.780	8.36	5.00
20.4*	22.95	27.91	38.22	134.59	3.42	4.823	3.521	6.75	4.00
15.3	17.37	22.18	36.49	115.12	3.42	5.190	3.154	5.11	3.00
10.2	11.69	15.70	34.52	90.06	3.32	5.735	2.609	3.44	2.00

*Indicates similarity to (L) shape.



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

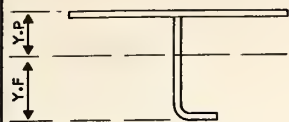
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STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
8 x 5 x 25.5	26.30	29.01	38.86	138.59	3.33	4.777	3.567	7.73	5.00
20.4	21.25	24.58	37.32	123.65	3.36	5.031	3.313	6.25	4.00
15.3	16.10	19.56	35.64	105.36	3.34	5.388	2.956	4.73	3.00
10.2	10.84	13.86	33.70	81.95	3.22	5.912	2.432	3.19	2.00
8 x 4 x 25.5*	24.17	25.03	37.66	125.45	3.25	5.013	3.331	7.11	5.00
20.4*	19.55	21.23	36.19	111.66	3.26	5.259	3.085	5.75	4.00
15.3	14.82	16.92	34.57	94.80	3.23	5.602	2.742	4.36	3.00
10.2	9.99	12.02	32.67	73.30	3.09	6.101	2.243	2.94	2.00

*Indicates similarity to (L) shape.



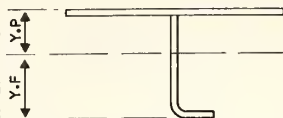
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 24 x 30.6	120.49	231.28	414.19	3,617.48	9.39	8.734	15.641	35.44	18.00
25.5	100.67	213.06	357.63	3,254.50	9.61	9.100	15.275	29.61	15.00
20.4	80.75	194.63	297.81	2,869.08	9.88	9.634	14.741	23.75	12.00
17.85	70.83	185.40	266.72	2,665.98	10.04	9.996	14.379	20.83	10.51
24 x 22 x 30.6	115.39	228.96	387.66	3,508.63	9.42	9.051	15.324	33.94	18.00
25.5	96.42	210.97	334.74	3,154.38	9.63	9.423	14.952	28.36	15.00
20.4	77.35	192.77	278.78	2,777.90	9.89	9.965	14.410	22.75	12.00
17.85	67.85	183.66	249.69	2,579.37	10.04	10.330	14.045	19.96	10.51
24 x 20 x 30.6	110.29	226.35	361.05	3,391.21	9.44	9.393	14.982	32.44	18.00
25.5	92.17	208.62	311.80	3,046.62	9.65	9.771	14.604	27.11	15.00
20.4	73.95	190.68	259.71	2,680.06	9.89	10.319	14.056	21.75	12.00
17.85	64.87	181.69	232.63	2,486.62	10.03	10.689	13.686	19.08	10.51
24 x 18 x 30.6	105.19	223.38	334.35	3,264.16	9.45	9.763	14.612	30.94	18.00
25.5	87.92	205.95	288.79	2,930.30	9.65	10.147	14.228	25.86	15.00
20.4	70.55	188.30	240.61	2,574.80	9.88	10.701	13.674	20.75	12.00
17.85	61.89	179.46	215.56	2,387.05	10.01	11.074	13.301	18.20	10.51
24 x 16 x 30.6	100.09	219.99	307.57	3,126.25	9.44	10.164	14.211	29.44	18.00
25.5	83.67	202.90	265.73	2,804.37	9.63	10.553	13.822	24.61	15.00
20.4	67.15	185.59	221.47	2,461.25	9.85	11.113	13.262	19.75	12.00
17.85	58.92	176.92	198.45	2,279.88	9.97	11.488	12.887	17.33	10.51
24 x 14 x 30.6	94.99	216.07	280.71	2,976.01	9.42	10.602	13.773	27.94	18.00
25.5	79.42	199.37	242.62	2,667.59	9.59	10.995	13.380	23.36	15.00
20.4	63.75	182.45	202.30	2,338.38	9.79	11.559	12.816	18.75	12.00
17.85	55.94	173.98	181.33	2,164.20	9.90	11.935	12.440	16.45	10.51
24 x 12 x 30.6	89.89	211.49	253.76	2,811.72	9.36	11.080	13.295	26.44	18.00
25.5	75.17	195.25	219.45	2,518.47	9.53	11.477	12.898	22.11	15.00
20.4	60.35	178.80	183.10	2,205.00	9.71	12.043	12.332	17.75	12.00
17.85	52.96	164.18	170.55	2,038.97	9.81	12.419	11.956	15.58	10.51
24 x 10 x 30.6	84.79	206.06	226.73	2,631.31	9.28	11.606	12.769	24.94	18.00
25.5	70.92	190.38	196.22	2,355.28	9.43	12.003	12.372	20.86	15.00
20.4	56.95	163.86	174.47	2,059.70	9.59	12.570	11.805	16.75	12.00
17.85	49.98	147.00	166.49	1,902.94	9.68	12.945	11.430	14.70	10.51
24 x 8 x 30.6	79.69	199.54	199.61	2,432.29	9.15	12.185	12.190	23.44	18.00
25.5	66.67	172.93	184.52	2,175.93	9.29	12.583	11.792	19.61	15.00
20.4	53.55	144.59	169.28	1,900.80	9.43	13.146	11.229	15.75	12.00
17.85	47.00	129.80	161.62	1,754.66	9.50	13.519	10.856	13.82	10.51
24 x 6 x 30.6	74.59	172.40	191.53	2,211.61	8.96	12.828	11.547	21.94	18.00
25.5	62.42	149.59	177.34	1,977.89	9.08	13.222	11.153	18.36	15.00
20.4	50.15	125.29	162.92	1,726.31	9.20	13.779	10.596	14.75	12.00
17.85	44.02	112.57	155.67	1,592.40	9.26	14.146	10.229	12.95	10.51
21 x 20 x 30.6	102.64	187.87	308.02	2,494.32	8.35	8.098	13.277	30.19	15.75
25.5	85.80	174.23	266.45	2,251.79	8.54	8.451	12.924	25.23	13.12
20.4	68.85	160.41	222.21	1,991.30	8.77	8.961	12.414	20.25	10.50
17.85	60.40	153.48	199.12	1,852.60	8.90	9.304	12.071	17.77	9.20
21 x 18 x 30.6	97.54	185.55	284.61	2,400.87	8.36	8.436	12.939	28.69	15.75
25.5	81.55	172.13	246.23	2,165.46	8.55	8.795	12.580	23.98	13.12
20.4	65.45	158.52	205.38	1,912.35	8.77	9.311	12.064	19.25	10.50
17.85	57.43	151.69	184.05	1,777.46	8.89	9.658	11.717	16.89	9.20
21 x 16 x 30.6	92.44	182.87	261.12	2,298.89	8.37	8.804	12.571	27.19	15.75
25.5	77.30	169.71	225.94	2,071.52	8.55	9.169	12.206	22.73	13.12
20.4	62.05	156.35	188.50	1,826.78	8.75	9.691	11.684	18.25	10.50
17.85	54.45	149.64	168.95	1,696.25	8.85	10.040	11.335	16.01	9.20



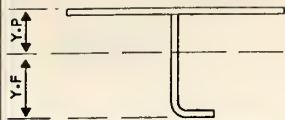
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 14 x 30.6	87.34	179.76	237.53	2,187.14	8.36	9.208	12.167	25.69	15.75
25.5	73.05	166.88	205.59	1,968.93	8.52	9.577	11.798	21.48	13.12
20.4	58.65	153.82	171.59	1,733.73	8.71	10.104	11.271	17.25	10.50
17.85	51.47	147.26	153.83	1,608.18	8.80	10.454	10.921	15.14	9.20
21 x 12 x 30.6	82.24	176.08	213.85	2,064.15	8.32	9.652	11.723	24.19	15.75
25.5	68.80	163.56	185.18	1,856.41	8.47	10.025	11.350	20.23	13.12
20.4	55.25	150.84	154.65	1,632.17	8.64	10.554	10.821	16.25	10.50
17.85	48.49	138.69	144.45	1,512.36	8.72	10.905	10.470	14.26	9.20
21 x 10 x 30.6	77.14	171.68	190.08	1,928.14	8.25	10.144	11.231	22.69	15.75
25.5	64.55	159.57	164.71	1,732.47	8.39	10.518	10.857	18.98	13.12
20.4	51.85	137.66	147.27	1,520.89	8.54	11.048	10.327	15.25	10.50
17.85	45.51	123.51	141.09	1,407.71	8.61	11.397	9.978	13.39	9.20
21 x 8 x 30.6	72.04	166.22	166.31	1,776.91	8.14	10.690	10.685	21.19	15.75
25.5	60.30	144.18	154.72	1,595.28	8.26	11.064	10.311	17.73	13.12
20.4	48.45	120.65	142.93	1,398.41	8.39	11.591	9.784	14.25	10.50
17.85	42.53	108.31	137.00	1,292.95	8.44	11.937	9.438	12.51	9.20
21 x 6 x 30.6	66.94	142.26	159.61	1,607.77	7.97	11.302	10.073	19.69	15.75
25.5	56.05	123.59	148.67	1,442.57	8.08	11.672	9.703	16.48	13.12
20.4	45.05	103.59	137.53	1,262.95	8.18	12.192	9.183	13.25	10.50
17.85	39.56	93.08	131.92	1,166.53	8.22	12.532	8.843	11.63	9.20
18 x 18 x 30.6	89.89	150.30	236.88	1,689.64	7.26	7.133	11.242	26.44	13.50
25.5	75.17	140.43	205.35	1,532.39	7.43	7.463	10.912	22.11	11.25
20.4	60.35	130.39	171.52	1,361.14	7.63	7.936	10.439	17.75	9.00
15.3	45.42	120.15	134.97	1,168.01	7.84	8.654	9.721	13.36	6.75
18 x 16 x 30.6	84.79	148.27	216.72	1,617.71	7.28	7.465	10.910	24.94	13.50
25.5	70.92	138.57	187.88	1,465.43	7.44	7.800	10.575	20.86	11.25
20.4	56.95	128.71	156.95	1,299.41	7.62	8.279	10.096	16.75	9.00
15.3	42.87	118.65	123.53	1,112.03	7.81	9.002	9.373	12.61	6.75
18 x 14 x 30.6	79.69	145.89	196.46	1,538.35	7.28	7.830	10.545	23.44	13.50
25.5	66.67	136.40	170.34	1,391.84	7.43	8.171	10.204	19.61	11.25
20.4	53.55	126.74	142.34	1,231.91	7.59	8.655	9.720	15.75	9.00
15.3	40.32	112.07	116.88	1,051.25	7.75	9.380	8.995	11.86	6.75
18 x 12 x 30.6	74.59	143.05	176.10	1,450.37	7.25	8.236	10.139	21.94	13.50
25.5	62.42	133.81	152.74	1,310.58	7.39	8.580	9.795	18.36	11.25
20.4	50.15	124.39	127.69	1,157.78	7.54	9.067	9.308	14.75	9.00
15.3	37.77	100.59	114.77	985.02	7.67	9.792	8.583	11.11	6.75
18 x 10 x 30.6	69.49	139.61	155.63	1,352.26	7.20	8.689	9.686	20.44	13.50
25.5	58.17	130.66	135.07	1,220.39	7.33	9.035	9.340	17.11	11.25
20.4	46.75	112.99	121.55	1,076.00	7.45	9.523	8.852	13.75	9.00
15.3	35.22	89.09	112.22	912.57	7.56	10.243	8.132	10.36	6.75
18 x 8 x 30.6	64.39	135.07	135.34	1,242.19	7.11	9.196	9.179	18.94	13.50
25.5	53.92	117.34	126.77	1,119.71	7.22	9.543	8.832	15.86	11.25
20.4	43.35	98.26	118.03	985.32	7.32	10.027	8.348	12.75	9.00
15.3	32.67	77.57	109.08	832.99	7.39	10.738	7.637	9.61	6.75
18 x 6 x 30.6	59.29	114.41	129.90	1,117.80	6.96	9.770	8.605	17.44	13.50
25.5	49.67	99.54	121.83	1,006.60	7.05	10.113	8.262	14.61	11.25
20.4	39.95	83.49	113.58	884.20	7.13	10.590	7.785	11.75	9.00
15.3	30.12	66.03	105.10	745.17	7.17	11.285	7.090	8.86	6.75
18 x 4 x 30.6	54.19	93.64	122.76	976.11	6.73	10.424	7.951	15.94	13.50
25.5	45.42	81.67	115.35	878.60	6.80	10.758	7.617	13.36	11.25
20.4	36.55	68.68	107.74	770.73	6.86	11.221	7.154	10.75	9.00
15.3	27.57	54.48	99.89	647.76	6.87	11.891	6.484	8.11	6.75



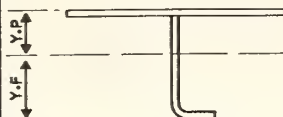
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ²	IN.	IN.	IN.	IN. ²	IN. ²
16 x 12 x 30.6	69.49	122.37	152.11	1,110.46	6.53	7.300	9.075	20.44	12.00
25.5	58.17	115.07	132.12	1,007.08	6.66	7.623	8.752	17.11	10.00
20.4	46.75	107.60	110.54	892.86	6.79	8.077	8.298	13.75	8.00
15.3	35.22	87.09	99.95	762.09	6.91	8.750	7.625	10.36	6.00
16 x 10 x 30.6	64.39	119.52	133.89	1,034.06	6.49	7.723	8.652	18.94	12.00
25.5	53.92	112.45	116.34	936.35	6.60	8.048	8.327	15.86	10.00
20.4	43.35	97.40	105.22	828.24	6.71	8.503	7.872	12.75	8.00
15.3	32.67	76.80	97.79	704.38	6.80	9.172	7.203	9.61	6.00
16 x 8 x 30.6	59.29	115.56	115.95	947.73	6.41	8.201	8.174	17.44	12.00
25.5	49.67	100.50	109.17	856.89	6.51	8.526	7.849	14.61	10.00
20.4	39.95	84.22	102.23	756.18	6.60	8.978	7.397	11.75	8.00
15.3	30.12	66.48	95.09	640.70	6.65	9.637	6.738	8.86	6.00
16 x 6 x 30.6	54.19	97.12	111.33	849.39	6.28	8.746	7.629	15.94	12.00
25.5	45.42	84.59	104.95	766.97	6.36	9.067	7.308	13.36	10.00
20.4	36.55	71.00	98.39	675.32	6.42	9.512	6.863	10.75	8.00
15.3	27.57	56.14	91.63	570.06	6.44	10.153	6.222	8.11	6.00
16 x 4 x 30.6	49.09	78.58	105.14	736.37	6.06	9.371	7.004	14.44	12.00
25.5	41.17	68.61	99.29	664.38	6.12	9.684	6.691	12.11	10.00
20.4	33.15	57.74	93.27	583.94	6.16	10.114	6.261	9.75	8.00
15.3	25.02	45.79	87.01	491.25	6.15	10.729	5.646	7.36	6.00
15 x 12 x 30.6	66.94	112.43	140.47	960.16	6.16	6.835	8.540	19.69	11.25
25.5	56.05	106.02	122.10	872.50	6.28	7.146	8.229	16.48	9.37
20.4	45.05	99.47	102.21	775.05	6.41	7.583	7.792	13.25	7.50
15.3	33.95	80.54	92.72	662.69	6.52	8.228	7.147	9.98	5.62
15 x 11 x 30.6	64.39	111.22	131.94	927.87	6.15	7.032	8.343	18.94	11.25
25.5	53.92	104.91	114.71	842.45	6.26	7.344	8.031	15.86	9.37
20.4	43.35	96.04	98.44	747.43	6.38	7.782	7.593	12.75	7.50
15.3	32.67	75.70	91.79	637.84	6.47	8.426	6.949	9.61	5.62
15 x 10 x 30.6	61.84	109.87	123.38	893.54	6.13	7.242	8.133	18.19	11.25
25.5	51.80	103.66	107.29	810.60	6.23	7.555	7.820	15.23	9.37
20.4	41.65	89.86	97.30	718.26	6.34	7.993	7.382	12.25	7.50
15.3	31.40	70.85	90.75	611.75	6.42	8.634	6.741	9.23	5.62
15 x 9 x 30.6	59.29	108.35	114.80	856.99	6.10	7.465	7.910	17.44	11.25
25.5	49.67	99.86	102.26	776.78	6.20	7.779	7.596	14.61	9.37
20.4	39.95	83.67	96.02	687.40	6.29	8.216	7.159	11.75	7.50
15.3	30.12	66.00	89.58	584.30	6.35	8.853	6.522	8.86	5.62
15 x 8 x 30.6	56.74	106.18	106.63	817.98	6.05	7.704	7.671	16.69	11.25
25.5	47.55	92.41	100.68	740.81	6.15	8.017	7.358	13.98	9.37
20.4	38.25	77.46	94.57	654.73	6.23	8.452	6.923	11.25	7.50
15.3	28.85	61.15	88.27	555.39	6.27	9.083	6.292	8.48	5.62
15 x 7 x 30.6	54.19	97.54	104.67	776.27	6.00	7.959	7.416	15.94	11.25
25.5	45.42	84.94	98.88	702.47	6.08	8.271	7.104	13.36	9.37
20.4	36.55	71.25	92.92	620.05	6.15	8.702	6.673	10.75	7.50
15.3	27.57	56.28	86.77	524.90	6.18	9.326	6.049	8.11	5.62
15 x 6 x 30.6	51.64	88.87	102.41	731.54	5.93	8.232	7.143	15.19	11.25
25.5	43.30	77.45	96.80	661.52	6.00	8.541	6.834	12.73	9.37
20.4	34.85	65.03	91.03	583.20	6.06	8.969	6.406	10.25	7.50
15.3	26.30	51.42	85.06	492.70	6.07	9.582	5.793	7.73	5.62
15 x 5 x 30.6	49.09	80.17	99.79	683.48	5.84	8.526	6.849	14.44	11.25
25.5	41.17	69.94	94.40	617.68	5.90	8.831	6.544	12.11	9.37
20.4	33.15	58.79	88.84	543.94	5.95	9.252	6.123	9.75	7.50
15.3	25.02	46.55	83.07	458.64	5.94	9.854	5.521	7.36	5.62



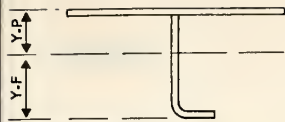
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 4 x 30.6	46.54	71.44	96.69	631.68	5.72	8.842	6.533	13.69	11.25
25.5	39.05	62.42	91.56	570.65	5.78	9.143	6.232	11.48	9.37
20.4	31.45	52.54	86.26	502.05	5.81	9.555	5.820	9.25	7.50
15.3	23.75	41.67	80.74	422.56	5.79	10.141	5.234	6.98	5.62
14 x 10 x 30.6	59.29	100.48	113.12	764.92	5.76	6.762	7.613	17.44	10.50
25.5	49.67	95.08	98.44	695.27	5.86	7.063	7.312	14.61	8.75
20.4	39.95	82.49	89.54	617.21	5.96	7.482	6.893	11.75	7.00
15.3	30.12	65.05	83.82	526.49	6.03	8.094	6.281	8.86	5.25
14 x 9 x 30.6	56.74	99.11	105.10	733.26	5.73	6.977	7.398	16.69	10.50
25.5	47.55	91.49	93.82	665.86	5.83	7.278	7.097	13.98	8.75
20.4	38.25	76.69	88.38	590.27	5.91	7.696	6.679	11.25	7.00
15.3	28.85	60.51	82.76	502.42	5.97	8.304	6.071	8.48	5.25
14 x 8 x 30.6	54.19	97.05	97.56	699.39	5.70	7.206	7.169	15.94	10.50
25.5	45.42	84.52	92.39	634.52	5.78	7.507	6.868	13.36	8.75
20.4	36.55	70.89	87.07	561.69	5.86	7.924	6.451	10.75	7.00
15.3	27.57	55.96	81.55	477.04	5.89	8.525	5.850	8.11	5.25
14 x 7 x 30.6	51.64	88.97	95.79	663.10	5.64	7.453	6.922	15.19	10.50
25.5	43.30	77.53	90.75	601.05	5.72	7.752	6.623	12.73	8.75
20.4	34.85	65.07	85.56	531.31	5.79	8.165	6.210	10.25	7.00
15.3	26.30	51.40	80.18	450.24	5.81	8.760	5.615	7.73	5.25
14 x 6 x 30.6	49.09	80.87	93.74	624.09	5.58	7.717	6.658	14.44	10.50
25.5	41.17	70.53	88.86	565.22	5.65	8.014	6.361	12.11	8.75
20.4	33.15	59.24	83.83	498.95	5.70	8.423	5.952	9.75	7.00
15.3	25.02	46.84	78.59	421.88	5.70	9.007	5.368	7.36	5.25
14 x 5 x 30.6	46.54	72.73	91.34	582.05	5.49	8.002	6.373	13.69	10.50
25.5	39.05	63.50	86.65	526.77	5.55	8.296	6.079	11.48	8.75
20.4	31.45	53.40	81.80	464.42	5.59	8.698	5.677	9.25	7.00
15.3	23.75	42.27	76.75	391.84	5.57	9.269	5.106	6.98	5.25
14 x 4 x 30.6	43.99	64.57	88.49	536.62	5.38	8.311	6.064	12.94	10.50
25.5	36.92	56.45	84.03	485.40	5.43	8.598	5.777	10.86	8.75
20.4	29.75	47.54	79.41	427.49	5.45	8.991	5.384	8.75	7.00
15.3	22.47	37.70	74.57	359.96	5.42	9.548	4.827	6.61	5.25
13 x 9 x 30.6	54.19	90.14	95.65	620.67	5.37	6.489	6.886	15.94	9.75
25.5	45.42	83.34	85.59	564.75	5.45	6.777	6.598	13.36	8.12
20.4	36.55	69.90	80.91	501.56	5.53	7.176	6.199	10.75	6.50
15.3	27.57	55.15	76.04	427.54	5.58	7.752	5.623	8.11	4.87
13 x 8 x 30.6	51.64	88.17	88.75	591.59	5.33	6.709	6.666	15.19	9.75
25.5	43.30	76.85	84.31	537.73	5.41	6.997	6.378	12.73	8.12
20.4	34.85	64.49	79.72	476.81	5.48	7.394	5.981	10.25	6.50
15.3	26.30	50.91	74.95	405.47	5.51	7.965	5.410	7.73	4.87
13 x 7 x 30.6	49.09	80.67	87.16	560.33	5.28	6.946	6.429	14.44	9.75
25.5	41.17	70.35	82.83	508.80	5.36	7.232	6.143	12.11	8.12
20.4	33.15	59.07	78.36	450.46	5.41	7.626	5.749	9.75	6.50
15.3	25.02	46.66	73.69	382.13	5.43	8.189	5.186	7.36	4.87
13 x 6 x 30.6	46.54	73.13	85.31	526.65	5.22	7.201	6.174	13.69	9.75
25.5	39.05	63.83	81.12	477.75	5.28	7.485	5.890	11.48	8.12
20.4	31.45	53.63	76.77	422.33	5.33	7.874	5.501	9.25	6.50
15.3	23.75	42.41	72.24	357.40	5.32	8.427	4.948	6.98	4.87
13 x 5 x 30.6	43.99	65.57	83.13	490.26	5.14	7.477	5.898	12.94	9.75
25.5	36.92	57.28	79.10	444.36	5.19	7.757	5.618	10.86	8.12
20.4	29.75	48.19	74.92	392.24	5.22	8.139	5.236	8.75	6.50
15.3	22.47	38.15	70.53	331.15	5.20	8.680	4.695	6.61	4.87



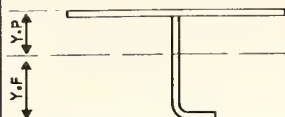
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
13 x 4 x 30.6	41.44	57.97	80.52	450.80	5.03	7.776	5.599	12.19	9.75
25.5	34.80	50.72	76.69	408.33	5.07	8.051	5.324	10.23	8.12
20.4	28.05	42.74	72.71	359.99	5.09	8.424	4.951	8.25	6.50
15.3	21.20	33.89	68.51	303.25	5.06	8.949	4.426	6.23	4.87
12 x 9 x 30.6	51.64	81.42	86.44	518.85	4.99	6.002	6.373	15.19	9.00
25.5	43.30	75.39	77.57	473.13	5.08	6.276	6.099	12.73	7.50
20.4	34.85	63.28	73.59	421.02	5.15	6.654	5.721	10.25	6.00
15.3	26.30	49.94	69.43	359.44	5.19	7.198	5.177	7.73	4.50
12 x 8 x 30.6	49.09	79.55	80.19	494.18	4.96	6.213	6.162	14.44	9.00
25.5	41.17	69.40	76.43	450.10	5.04	6.486	5.889	12.11	7.50
20.4	33.15	58.27	72.53	399.84	5.10	6.862	5.513	9.75	6.00
15.3	25.02	46.01	68.45	340.47	5.12	7.401	4.974	7.36	4.50
12 x 7 x 30.6	46.54	72.62	78.78	467.60	4.92	6.439	5.936	13.69	9.00
25.5	39.05	63.39	75.11	425.40	4.99	6.711	5.664	11.48	7.50
20.4	31.45	53.25	71.30	377.24	5.04	7.084	5.291	9.25	6.00
15.3	23.75	42.07	67.31	320.38	5.04	7.615	4.760	6.98	4.50
12 x 6 x 30.6	43.99	65.66	77.12	438.86	4.86	6.684	5.691	12.94	9.00
25.5	36.92	57.35	73.57	398.81	4.92	6.954	5.421	10.86	7.50
20.4	29.75	48.22	69.87	353.06	4.96	7.322	5.053	8.75	6.00
15.3	22.47	38.13	65.98	299.05	4.94	7.843	4.532	6.61	4.50
12 x 5 x 30.6	41.44	58.66	75.16	407.72	4.78	6.950	5.425	12.19	9.00
25.5	34.80	51.30	71.74	370.14	4.83	7.216	5.159	10.23	7.50
20.4	28.05	43.18	68.18	327.14	4.86	7.577	4.798	8.25	6.00
15.3	21.20	34.18	64.42	276.37	4.83	8.085	4.290	6.23	4.50
12 x 4 x 30.6	38.89	51.64	72.79	373.83	4.68	7.239	5.136	11.44	9.00
25.5	32.67	45.22	69.55	339.12	4.72	7.499	4.876	9.61	7.50
20.4	26.35	38.12	66.15	299.29	4.73	7.851	4.524	7.75	6.00
15.3	19.92	30.23	62.55	252.22	4.69	8.343	4.032	5.86	4.50
11 x 8 x 25.5	39.05	62.16	68.75	371.34	4.66	5.974	5.401	11.48	6.87
22.95	35.29	57.36	67.15	351.89	4.69	6.135	5.240	10.38	6.19
20.4	31.45	52.23	65.49	330.53	4.71	6.328	5.047	9.25	5.50
17.85	27.64	46.93	63.81	307.59	4.73	6.555	4.820	8.13	4.82
15.3	23.75	41.25	62.05	281.85	4.73	6.833	4.542	6.98	4.12
11 x 7 x 25.5	36.92	56.64	67.59	350.53	4.61	6.188	5.187	10.86	6.87
22.95	33.38	52.28	66.02	331.88	4.64	6.348	5.027	9.82	6.19
20.4	29.75	47.62	64.40	311.40	4.65	6.539	4.836	8.75	5.50
17.85	26.15	42.79	62.75	289.42	4.66	6.763	4.612	7.69	4.82
15.3	22.47	37.63	61.03	264.78	4.65	7.036	4.339	6.61	4.12
11 x 6 x 25.5	34.80	51.10	66.21	328.08	4.55	6.420	4.955	10.23	6.87
22.95	31.46	47.18	64.70	310.36	4.57	6.578	4.797	9.25	6.19
20.4	28.05	42.99	63.12	290.90	4.58	6.766	4.609	8.25	5.50
17.85	24.66	38.65	61.52	270.02	4.58	6.986	4.389	7.25	4.82
15.3	21.20	34.00	59.83	246.63	4.56	7.253	4.122	6.23	4.12
11 x 5 x 25.5	32.67	45.54	64.58	303.79	4.47	6.671	4.704	9.61	6.87
22.95	29.55	42.07	63.12	287.15	4.48	6.825	4.550	8.69	6.19
20.4	26.35	38.36	61.59	268.87	4.48	7.010	4.365	7.75	5.50
17.85	23.17	34.50	60.04	249.25	4.48	7.224	4.151	6.82	4.82
15.3	19.92	30.37	58.41	227.30	4.45	7.484	3.891	5.86	4.12
11 x 4 x 25.5	30.55	39.96	62.59	277.42	4.36	6.943	4.432	8.98	6.87
22.95	27.64	36.94	61.20	262.04	4.37	7.093	4.282	8.13	6.19
20.4	24.65	33.71	59.74	245.12	4.36	7.272	4.103	7.25	5.50
17.85	21.69	30.35	58.26	226.97	4.35	7.479	3.896	6.38	4.82
15.3	18.65	26.73	56.69	206.65	4.31	7.730	3.645	5.48	4.12



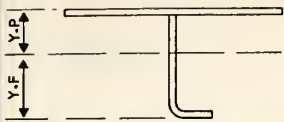
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 8 x 25.5	36.92	55.14	61.28	301.13	4.27	5.461	4.914	10.86	6.25
22.95	33.38	50.91	59.97	285.67	4.30	5.611	4.764	9.82	5.63
20.4	29.75	46.38	58.60	268.61	4.32	5.792	4.583	8.75	5.00
17.85	26.15	41.68	57.22	250.19	4.33	6.003	4.372	7.69	4.38
15.3	22.47	36.64	55.76	229.41	4.33	6.261	4.114	6.61	3.75
10 x 7 x 25.5	34.80	50.12	60.26	283.89	4.23	5.664	4.711	10.23	6.25
22.95	31.46	46.29	58.98	269.06	4.25	5.813	4.562	9.25	5.63
20.4	28.05	42.18	57.64	252.69	4.27	5.991	4.384	8.25	5.00
17.85	24.66	37.91	56.28	235.03	4.27	6.199	4.176	7.25	4.38
15.3	21.20	33.34	54.85	215.14	4.26	6.453	3.922	6.23	3.75
10 x 6 x 25.5	32.67	45.08	59.05	265.24	4.17	5.883	4.492	9.61	6.25
22.95	29.55	41.64	57.81	251.14	4.19	6.031	4.344	8.69	5.63
20.4	26.35	37.96	56.51	235.58	4.20	6.206	4.169	7.75	5.00
17.85	23.17	34.14	55.18	218.81	4.19	6.410	3.965	6.82	4.38
15.3	19.92	30.03	53.78	199.94	4.17	6.657	3.718	5.86	3.75
10 x 5 x 25.5	30.55	40.02	57.60	244.99	4.10	6.122	4.253	8.98	6.25
22.95	27.64	36.99	56.40	231.76	4.11	6.266	4.109	8.13	5.63
20.4	24.65	33.73	55.14	217.15	4.11	6.437	3.938	7.25	5.00
17.85	21.69	30.35	53.86	201.40	4.10	6.636	3.739	6.38	4.38
15.3	18.65	26.72	52.50	183.71	4.07	6.876	3.499	5.48	3.75
10 x 4 x 25.5	28.42	34.94	55.82	222.94	3.99	6.381	3.994	8.36	6.25
22.95	25.72	32.31	54.68	210.72	4.00	6.521	3.854	7.57	5.63
20.4	22.95	29.49	53.48	197.22	3.99	6.687	3.688	6.75	5.00
17.85	20.20	26.56	52.25	182.68	3.97	6.879	3.496	5.94	4.38
15.3	17.37	23.40	50.94	166.34	3.94	7.109	3.266	5.11	3.75



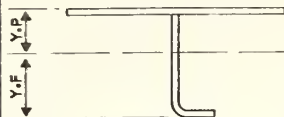
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	324.89	541.89	5,572.99	10.82	10.284	17.154	39.94	20.25
25.5	113.42	301.70	467.08	5,029.47	11.07	10.768	16.670	33.36	16.87
20.4	90.95	278.27	388.09	4,446.72	11.37	11.458	15.980	26.75	13.50
17.85	79.76	266.53	347.09	4,136.59	11.53	11.918	15.520	23.46	11.83
27 x 24 x 30.6	128.14	320.55	495.64	5,340.99	10.85	10.776	16.662	37.69	20.25
25.5	107.05	297.76	427.27	4,814.64	11.09	11.268	16.170	31.48	16.87
20.4	85.85	274.71	355.07	4,249.67	11.36	11.969	15.469	25.25	13.50
17.85	75.30	263.18	317.59	3,948.80	11.51	12.434	15.004	22.15	11.83
27 x 21 x 30.6	120.49	315.45	449.23	5,084.77	10.86	11.319	16.119	35.44	20.25
25.5	100.67	293.13	387.34	4,578.19	11.08	11.819	15.619	29.61	16.87
20.4	80.75	270.54	321.99	4,033.83	11.33	12.528	14.910	23.75	13.50
17.85	70.83	259.23	288.05	3,743.70	11.46	12.997	14.441	20.83	11.83
27 x 18 x 30.6	112.84	309.37	402.67	4,800.36	10.84	11.921	15.517	33.19	20.25
25.5	94.30	287.61	347.31	4,316.71	11.04	12.429	15.009	27.73	16.87
20.4	75.65	265.58	288.84	3,796.34	11.26	13.143	14.295	22.25	13.50
17.85	66.36	254.54	258.47	3,518.78	11.38	13.614	13.824	19.52	11.83
27 x 15 x 30.6	105.19	302.00	355.94	4,482.80	10.78	12.594	14.844	30.94	20.25
25.5	87.92	280.92	307.18	4,026.00	10.96	13.106	14.332	25.86	16.87
20.4	70.55	255.63	259.57	3,533.79	11.15	13.824	13.614	20.75	13.50
17.85	61.89	228.83	248.87	3,271.01	11.24	14.294	13.144	18.20	11.83
27 x 12 x 30.6	97.54	292.88	309.05	4,125.95	10.65	13.350	14.088	28.69	20.25
25.5	81.55	266.94	272.65	3,700.85	10.81	13.864	13.574	23.98	16.87
20.4	65.45	222.36	252.14	3,241.98	10.97	14.580	12.858	19.25	13.50
17.85	57.43	199.15	241.85	2,996.74	11.05	15.047	12.391	16.89	11.83
27 x 9 x 30.6	89.89	262.00	281.30	3,722.04	10.45	14.206	13.232	26.44	20.25
25.5	75.17	226.59	262.15	3,334.78	10.58	14.717	12.721	22.11	16.87
20.4	60.35	189.02	242.73	2,915.74	10.71	15.426	12.012	17.75	13.50
17.85	52.96	169.43	232.98	2,691.47	10.76	15.885	11.553	15.58	11.83
27 x 6 x 30.6	82.24	214.78	266.11	3,261.10	10.12	15.183	12.255	24.19	20.25
25.5	68.80	186.13	248.41	2,919.51	10.23	15.685	11.753	20.23	16.87
20.4	55.25	155.62	230.42	2,548.60	10.32	16.377	11.061	16.25	13.50
17.85	48.49	139.66	221.37	2,349.62	10.35	16.824	10.614	14.26	11.83
24 x 24 x 30.6	120.49	273.35	431.78	4,090.52	9.74	9.474	14.964	35.44	18.00
25.5	100.67	255.27	372.61	3,702.03	9.96	9.935	14.503	29.61	15.00
20.4	80.75	236.95	309.84	3,281.23	10.22	10.590	13.848	23.75	12.00
17.85	70.83	227.76	277.15	3,055.26	10.35	11.024	13.414	20.83	10.51
24 x 22 x 30.6	115.39	270.68	404.20	3,961.80	9.76	9.802	14.636	33.94	18.00
25.5	96.42	252.82	348.83	3,582.23	9.97	10.269	14.169	28.36	15.00
20.4	77.35	234.73	290.10	3,170.78	10.21	10.930	13.508	22.75	12.00
17.85	67.85	225.66	259.52	2,949.74	10.33	11.366	13.072	19.96	10.51
24 x 20 x 30.6	110.29	267.68	376.54	3,823.46	9.76	10.154	14.284	32.44	18.00
25.5	92.17	250.08	325.00	3,453.81	9.96	10.627	13.811	27.11	15.00
20.4	73.95	232.24	270.33	3,052.82	10.19	11.293	13.145	21.75	12.00
17.85	64.87	223.29	241.86	2,837.31	10.30	11.731	12.707	19.08	10.51
24 x 18 x 30.6	105.19	264.27	348.81	3,674.37	9.76	10.534	13.904	30.94	18.00
25.5	87.92	246.96	301.12	3,315.83	9.94	11.012	13.426	25.86	15.00
20.4	70.55	229.42	250.53	2,926.56	10.15	11.681	12.757	20.75	12.00
17.85	61.89	220.61	224.18	2,717.26	10.25	12.121	12.317	18.20	10.51
24 x 16 x 30.6	100.09	260.37	321.00	3,513.23	9.73	10.945	13.493	29.44	18.00
25.5	83.67	243.40	277.19	3,167.16	9.91	11.426	13.012	24.61	15.00
20.4	67.15	226.19	230.70	2,791.10	10.09	12.098	12.340	19.75	12.00
17.85	58.92	206.47	217.55	2,588.81	10.18	12.538	11.900	17.33	10.51



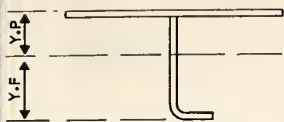
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 14 x 30.6	94.99	255.86	293.11	3,338.53	9.68	11.390	13.048	27.94	18.00
25.5	79.42	239.29	253.21	3,006.52	9.84	11.873	12.565	23.36	15.00
20.4	63.75	210.84	222.47	2,645.38	10.01	12.547	11.891	18.75	12.00
17.85	55.94	188.75	214.02	2,451.02	10.08	12.985	11.453	16.45	10.51
24 x 12 x 30.6	89.89	250.60	265.15	3,148.46	9.61	11.874	12.564	26.44	18.00
25.5	75.17	229.18	234.48	2,832.39	9.75	12.359	12.079	22.11	15.00
20.4	60.35	190.95	218.12	2,488.20	9.89	13.030	11.408	17.75	12.00
17.85	52.96	171.01	209.89	2,302.86	9.95	13.467	10.971	15.58	10.51
24 x 10 x 30.6	84.79	237.11	244.37	2,940.92	9.50	12.403	12.035	24.94	18.00
25.5	70.92	205.10	228.80	2,643.01	9.62	12.887	11.551	20.86	15.00
20.4	56.95	171.03	212.98	2,318.15	9.74	13.554	10.884	16.75	12.00
17.85	49.98	153.24	205.03	2,143.09	9.79	13.985	10.453	14.70	10.51
24 x 8 x 30.6	79.69	208.99	236.88	2,713.37	9.34	12.983	11.455	23.44	18.00
25.5	66.67	180.97	221.98	2,436.29	9.45	13.463	10.975	19.61	15.00
20.4	53.55	151.08	206.82	2,133.58	9.54	14.122	10.316	15.75	12.00
17.85	47.00	135.45	199.19	1,970.30	9.57	14.546	9.892	13.82	10.51
24 x 6 x 30.6	74.59	180.79	227.69	2,462.77	9.12	13.622	10.816	21.94	18.00
25.5	62.42	156.78	213.62	2,209.71	9.21	14.094	10.344	18.36	15.00
20.4	50.15	131.10	199.28	1,932.55	9.28	14.740	9.698	14.75	12.00
17.85	44.02	117.64	192.05	1,782.83	9.30	15.155	9.283	12.95	10.51
21 x 20 x 30.6	102.64	224.33	321.40	2,832.28	8.65	8.812	12.626	30.19	15.75
25.5	85.80	210.81	277.72	2,569.17	8.84	9.251	12.187	25.23	13.12
20.4	68.85	197.08	231.14	2,280.53	9.04	9.867	11.571	20.25	10.50
17.85	60.40	190.18	206.80	2,123.86	9.14	10.270	11.168	17.77	9.20
21 x 18 x 30.6	97.54	221.63	297.04	2,721.02	8.65	9.161	12.277	28.69	15.75
25.5	81.55	208.33	256.70	2,465.32	8.82	9.604	11.834	23.98	13.12
20.4	65.45	194.81	213.68	2,184.59	9.01	10.224	11.214	19.25	10.50
17.85	57.43	188.01	191.20	2,032.19	9.10	10.629	10.809	16.89	9.20
21 x 16 x 30.6	92.44	218.51	272.60	2,600.19	8.64	9.539	11.899	27.19	15.75
25.5	77.30	205.46	235.62	2,352.92	8.80	9.986	11.452	22.73	13.12
20.4	62.05	192.19	196.19	2,081.26	8.96	10.609	10.829	18.25	10.50
17.85	54.45	175.57	185.50	1,933.74	9.04	11.014	10.424	16.01	9.20
21 x 14 x 30.6	87.34	214.89	248.08	2,468.50	8.60	9.951	11.487	25.69	15.75
25.5	73.05	202.12	214.49	2,230.90	8.75	10.401	11.037	21.48	13.12
20.4	58.65	178.66	189.14	1,969.63	8.89	11.024	10.414	17.25	10.50
17.85	51.47	159.93	182.60	1,827.73	8.95	11.428	10.010	15.14	9.20
21 x 12 x 30.6	82.24	210.61	223.47	2,324.42	8.54	10.401	11.037	24.19	15.75
25.5	68.80	193.31	198.19	2,097.94	8.67	10.853	10.585	20.23	13.12
20.4	55.25	161.11	185.55	1,848.67	8.79	11.475	9.963	16.25	10.50
17.85	48.49	144.26	179.17	1,713.25	8.84	11.876	9.562	14.26	9.20
21 x 10 x 30.6	77.14	198.78	205.49	2,166.10	8.45	10.897	10.541	22.69	15.75
25.5	64.55	172.08	193.49	1,952.52	8.56	11.347	10.091	18.98	13.12
20.4	51.85	143.52	181.26	1,717.16	8.66	11.964	9.474	15.25	10.50
17.85	45.51	128.57	175.08	1,589.25	8.69	12.361	9.077	13.39	9.20
21 x 8 x 30.6	72.04	174.01	199.25	1,991.34	8.31	11.444	9.994	21.19	15.75
25.5	60.30	150.79	187.76	1,792.80	8.40	11.890	9.548	17.73	13.12
20.4	48.45	125.91	176.04	1,573.66	8.47	12.499	8.939	14.25	10.50
17.85	42.53	112.86	170.11	1,454.48	8.49	12.888	8.550	12.51	9.20
21 x 6 x 30.6	66.94	149.16	191.47	1,797.42	8.11	12.051	9.387	19.69	15.75
25.5	56.05	129.44	180.64	1,616.55	8.18	12.489	8.949	16.48	13.12
20.4	45.05	108.26	169.55	1,416.44	8.23	13.084	8.354	13.25	10.50
17.85	39.56	97.12	163.94	1,307.49	8.23	13.463	7.975	11.63	9.20



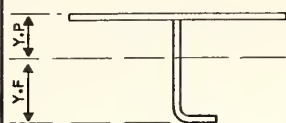
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 18 x 30.6	89.89	181.49	247.32	1,929.98	7.52	7.804	10.634	26.44	13.50
25.5	75.17	171.72	214.01	1,756.65	7.68	8.208	10.230	22.11	11.25
20.4	60.35	161.75	178.27	1,563.66	7.84	8.771	9.667	17.75	9.00
15.3	45.42	139.70	151.54	1,340.24	7.98	9.594	8.844	13.36	6.75
18 x 16 x 30.6	84.79	179.09	226.30	1,843.32	7.52	8.145	10.293	24.94	13.50
25.5	70.92	169.49	195.84	1,675.27	7.66	8.554	9.884	20.86	11.25
20.4	56.95	159.70	163.16	1,488.06	7.81	9.120	9.318	16.75	9.00
15.3	42.87	127.89	149.64	1,271.42	7.92	9.942	8.496	12.61	6.75
18 x 14 x 30.6	79.69	176.28	205.20	1,748.31	7.50	8.520	9.918	23.44	13.50
25.5	66.67	166.88	177.62	1,586.43	7.63	8.932	9.506	19.61	11.25
20.4	53.55	148.02	157.28	1,406.00	7.75	9.499	8.939	15.75	9.00
15.3	40.32	116.06	147.42	1,197.32	7.83	10.316	8.122	11.86	6.75
18 x 12 x 30.6	74.59	172.92	184.01	1,643.69	7.45	8.933	9.505	21.94	13.50
25.5	62.42	159.33	163.77	1,489.07	7.56	9.346	9.092	18.36	11.25
20.4	50.15	132.84	154.41	1,316.63	7.66	9.911	8.527	14.75	9.00
15.3	37.77	104.22	144.78	1,117.29	7.71	10.721	7.717	11.11	6.75
18 x 10 x 30.6	69.49	162.73	168.85	1,527.90	7.37	9.389	9.049	20.44	13.50
25.5	58.17	140.99	160.00	1,381.89	7.47	9.801	8.637	17.11	11.25
20.4	46.75	117.63	150.93	1,218.91	7.54	10.362	8.076	13.75	9.00
15.3	35.22	92.36	141.58	1,030.61	7.56	11.159	7.279	10.36	6.75
18 x 8 x 30.6	64.39	141.36	163.82	1,399.07	7.25	9.898	8.540	18.94	13.50
25.5	53.92	122.59	155.34	1,263.33	7.33	10.305	8.133	15.86	11.25
20.4	43.35	102.38	146.64	1,111.63	7.38	10.857	7.581	12.75	9.00
15.3	32.67	80.48	137.65	936.40	7.36	11.635	6.803	9.61	6.75
18 x 6 x 30.6	59.29	119.89	157.42	1,254.86	7.07	10.466	7.972	17.44	13.50
25.5	49.67	104.13	149.42	1,131.46	7.13	10.866	7.572	14.61	11.25
20.4	39.95	87.10	141.20	993.30	7.15	11.404	7.034	11.75	9.00
15.3	30.12	68.59	132.67	833.65	7.10	12.154	6.284	8.86	6.75
18 x 4 x 30.6	54.19	98.34	149.01	1,092.33	6.80	11.108	7.330	15.94	13.50
25.5	45.42	85.61	141.68	983.93	6.84	11.493	6.945	13.36	11.25
20.4	36.55	71.79	134.10	862.12	6.84	12.009	6.429	10.75	9.00
15.3	27.57	56.68	126.18	721.13	6.76	12.723	5.715	8.11	6.75
16 x 12 x 30.6	69.49	149.08	158.93	1,264.48	6.71	7.956	8.482	20.44	12.00
25.5	58.17	137.74	141.86	1,148.75	6.81	8.340	8.098	17.11	10.00
20.4	46.75	114.88	134.45	1,018.29	6.89	8.864	7.574	13.75	8.00
15.3	35.22	90.10	126.77	865.75	6.93	9.609	6.829	10.36	6.00
16 x 10 x 30.6	64.39	139.95	145.68	1,173.33	6.64	8.384	8.054	18.94	12.00
25.5	53.92	121.35	138.68	1,063.88	6.72	8.767	7.671	15.86	10.00
20.4	43.35	101.28	131.49	940.44	6.79	9.286	7.152	12.75	8.00
15.3	32.67	79.49	124.02	796.28	6.79	10.017	6.421	9.61	6.00
16 x 8 x 30.6	59.29	120.89	141.41	1,071.31	6.53	8.862	7.576	17.44	12.00
25.5	49.67	104.91	134.71	969.48	6.60	9.241	7.197	14.61	10.00
20.4	39.95	87.64	127.80	854.57	6.63	9.751	6.687	11.75	8.00
15.3	30.12	68.86	120.60	720.51	6.60	10.463	5.975	8.86	6.00
16 x 6 x 30.6	54.19	101.72	135.91	956.33	6.36	9.401	7.037	15.94	12.00
25.5	45.42	88.41	129.59	863.87	6.41	9.772	6.666	13.36	10.00
20.4	36.55	73.96	123.05	759.37	6.42	10.267	6.171	10.75	8.00
15.3	27.57	58.21	116.21	637.55	6.36	10.952	5.486	8.11	6.00
16 x 4 x 30.6	49.09	82.46	128.54	825.75	6.11	10.014	6.424	14.44	12.00
25.5	41.17	71.84	122.75	744.92	6.14	10.369	6.069	12.11	10.00
20.4	33.15	60.25	116.73	653.26	6.12	10.842	5.596	9.75	8.00
15.3	25.02	47.55	110.38	546.30	6.03	11.489	4.949	7.36	6.00



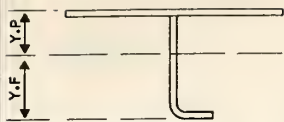
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 12 x 30.6	66.94	137.55	146.75	1,096.13	6.33	7.469	7.969	19.69	11.25
25.5	56.05	127.25	131.22	997.34	6.43	7.837	7.601	16.48	9.37
20.4	45.05	106.16	124.70	885.28	6.50	8.339	7.099	13.25	7.50
15.3	33.95	83.26	117.92	753.41	6.53	9.049	6.389	9.98	5.62
15 x 11 x 30.6	64.39	136.09	137.86	1,057.29	6.30	7.669	7.769	18.94	11.25
25.5	53.92	119.57	129.85	960.99	6.39	8.037	7.401	15.86	9.37
20.4	43.35	99.77	123.42	851.75	6.46	8.537	6.901	12.75	7.50
15.3	32.67	78.27	116.73	723.32	6.47	9.241	6.197	9.61	5.62
15 x 10 x 30.6	61.84	128.95	134.46	1,016.19	6.27	7.881	7.557	18.19	11.25
25.5	51.80	111.86	128.33	922.65	6.35	8.248	7.190	15.23	9.37
20.4	41.65	93.38	122.00	816.54	6.40	8.745	6.693	12.25	7.50
15.3	31.40	73.28	115.39	691.90	6.40	9.442	5.996	9.23	5.62
15 x 9 x 30.6	59.29	120.01	132.64	972.65	6.22	8.105	7.333	17.44	11.25
25.5	49.67	104.14	126.62	882.17	6.29	8.471	6.967	14.61	9.37
20.4	39.95	86.97	120.40	779.52	6.34	8.963	6.475	11.75	7.50
15.3	30.12	68.28	113.90	659.05	6.31	9.652	5.786	8.86	5.62
15 x 8 x 30.6	56.74	111.04	130.57	926.42	6.17	8.343	7.095	16.69	11.25
25.5	47.55	96.41	124.68	839.35	6.23	8.706	6.732	13.98	9.37
20.4	38.25	80.55	118.60	740.55	6.26	9.194	6.244	11.25	7.50
15.3	28.85	63.28	112.22	624.67	6.22	9.872	5.566	8.48	5.62
15 x 7 x 30.6	54.19	102.05	128.22	877.26	6.10	8.596	6.842	15.94	11.25
25.5	45.42	88.66	122.48	793.99	6.14	8.956	6.482	13.36	9.37
20.4	36.55	74.12	116.55	699.46	6.16	9.436	6.002	10.75	7.50
15.3	27.57	58.27	110.31	588.66	6.11	10.102	5.336	8.11	5.62
15 x 6 x 30.6	51.64	93.04	125.51	824.87	6.01	8.866	6.572	15.19	11.25
25.5	43.30	80.89	119.96	745.85	6.05	9.220	6.218	12.73	9.37
20.4	34.85	67.69	114.19	656.07	6.05	9.693	5.745	10.25	7.50
15.3	26.30	53.26	108.13	550.90	5.98	10.343	5.095	7.73	5.62
15 x 5 x 30.6	49.09	84.00	122.36	768.93	5.90	9.154	6.284	14.44	11.25
25.5	41.17	73.11	117.02	694.67	5.93	9.502	5.936	12.11	9.37
20.4	33.15	61.24	111.47	610.20	5.92	9.964	5.474	9.75	7.50
15.3	25.02	48.25	105.60	511.26	5.83	10.596	4.842	7.36	5.62
15 x 4 x 30.6	46.54	74.94	118.65	709.07	5.76	9.462	5.976	13.69	11.25
25.5	39.05	65.31	113.57	640.15	5.78	9.802	5.636	11.48	9.37
20.4	31.45	54.79	108.27	561.62	5.76	10.251	5.187	9.25	7.50
15.3	23.75	43.23	102.64	469.58	5.66	10.863	4.575	6.98	5.62
14 x 10 x 30.6	59.29	118.20	123.50	871.98	5.89	7.377	7.061	17.44	10.50
25.5	49.67	102.59	118.17	792.86	5.97	7.728	6.710	14.61	8.75
20.4	39.95	85.66	112.65	702.54	6.01	8.202	6.236	11.75	7.00
15.3	30.12	67.22	106.87	595.76	6.00	8.863	5.575	8.86	5.25
14 x 9 x 30.6	56.74	109.84	121.85	834.04	5.85	7.593	6.845	16.69	10.50
25.5	47.55	95.37	116.62	757.48	5.91	7.942	6.496	13.98	8.75
20.4	38.25	79.66	111.19	670.08	5.95	8.412	6.026	11.25	7.00
15.3	28.85	62.54	105.50	566.88	5.92	9.065	5.373	8.48	5.25
14 x 8 x 30.6	54.19	101.47	119.97	793.69	5.80	7.822	6.616	15.94	10.50
25.5	45.42	88.14	114.85	719.99	5.85	8.169	6.269	13.36	8.75
20.4	36.55	73.65	109.54	635.86	5.88	8.633	5.805	10.75	7.00
15.3	27.57	57.85	103.95	536.62	5.83	9.276	5.162	8.11	5.25
14 x 7 x 30.6	51.64	93.06	117.82	750.69	5.73	8.067	6.371	15.19	10.50
25.5	43.30	80.88	112.84	680.21	5.77	8.410	6.028	12.73	8.75
20.4	34.85	67.64	107.65	599.73	5.78	8.867	5.571	10.25	7.00
15.3	26.30	53.16	102.18	504.89	5.72	9.497	4.941	7.73	5.25



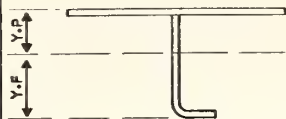
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ²	IN.	IN.	IN.	IN. ²	IN. ²
14 x 6 x 30.6	49.09	84.63	115.34	704.78	5.65	8.328	6.110	14.44	10.50
25.5	41.17	73.61	110.51	637.92	5.68	8.666	5.772	12.11	8.75
20.4	33.15	61.61	105.48	561.53	5.68	9.114	5.324	9.75	7.00
15.3	25.02	48.47	100.14	471.58	5.60	9.729	4.709	7.36	5.25
13 x 9 x 30.6	54.19	99.94	111.30	707.61	5.47	7.080	6.358	15.94	9.75
25.5	45.42	86.82	106.81	643.58	5.53	7.412	6.026	13.36	8.12
20.4	36.55	72.54	102.13	569.99	5.56	7.857	5.581	10.75	6.50
15.3	27.57	56.95	97.19	482.53	5.53	8.473	4.965	8.11	4.87
13 x 8 x 30.6	51.64	92.15	109.61	672.74	5.42	7.300	6.138	15.19	9.75
25.5	43.30	80.09	105.21	611.09	5.47	7.630	5.808	12.73	8.12
20.4	34.85	66.95	100.63	540.24	5.49	8.069	5.369	10.25	6.50
15.3	26.30	52.58	95.77	456.16	5.44	8.675	4.763	7.73	4.87
13 x 7 x 30.6	49.09	84.34	107.67	635.52	5.36	7.535	5.903	14.44	9.75
25.5	41.17	73.34	103.38	576.55	5.40	7.861	5.577	12.11	8.12
20.4	33.15	61.35	98.90	508.78	5.40	8.294	5.144	9.75	6.50
15.3	25.02	48.22	94.14	428.47	5.34	8.886	4.552	7.36	4.87
13 x 6 x 30.6	46.54	76.50	105.41	595.68	5.28	7.787	5.651	13.69	9.75
25.5	39.05	66.57	101.26	539.75	5.31	8.107	5.331	11.48	8.12
20.4	31.45	55.73	96.90	475.47	5.30	8.531	4.907	9.25	6.50
15.3	23.75	43.84	92.25	399.36	5.22	9.109	4.329	6.98	4.87
12 x 9 x 30.6	51.64	90.30	101.00	592.97	5.09	6.567	5.871	15.19	9.00
25.5	43.30	78.50	97.20	540.16	5.14	6.881	5.557	12.73	7.50
20.4	34.85	65.62	93.22	479.00	5.17	7.300	5.138	10.25	6.00
15.3	26.30	51.52	88.97	405.80	5.13	7.877	4.561	7.73	4.50
12 x 8 x 30.6	49.09	83.11	99.49	563.20	5.05	6.777	5.661	14.44	9.00
25.5	41.17	72.28	95.77	512.32	5.09	7.088	5.350	12.11	7.50
20.4	33.15	60.44	91.86	453.43	5.10	7.502	4.936	9.75	6.00
15.3	25.02	47.47	87.68	383.07	5.05	8.069	4.369	7.36	4.50
12 x 7 x 30.6	46.54	75.89	97.74	531.35	4.99	7.002	5.436	13.69	9.00
25.5	39.05	66.04	94.11	482.67	5.02	7.309	5.129	11.48	7.50
20.4	31.45	55.25	90.29	426.35	5.02	7.716	4.722	9.25	6.00
15.3	23.75	43.43	86.19	359.17	4.95	8.271	4.167	6.98	4.50
12 x 6 x 30.6	43.99	68.64	95.70	497.18	4.91	7.243	5.195	12.94	9.00
25.5	36.92	59.78	92.18	451.02	4.93	7.545	4.893	10.86	7.50
20.4	29.75	50.06	88.47	397.62	4.92	7.943	4.495	8.75	6.00
15.3	22.47	39.38	84.45	334.02	4.84	8.483	3.955	6.61	4.50
11 x 8 x 25.5	39.05	64.70	86.51	423.37	4.70	6.544	4.894	11.48	6.87
22.95	35.29	59.58	84.91	400.47	4.71	6.721	4.717	10.38	6.19
20.4	31.45	54.13	83.23	375.16	4.71	6.930	4.508	9.25	5.50
17.85	27.64	48.51	81.51	347.86	4.69	7.170	4.268	8.13	4.82
15.3	23.75	42.52	79.68	317.14	4.65	7.458	3.980	6.98	4.12
11 x 7 x 25.5	36.92	58.97	85.03	398.27	4.64	6.754	4.684	10.86	6.87
22.95	33.38	54.32	83.46	376.35	4.64	6.929	4.509	9.82	6.19
20.4	29.75	49.37	81.82	352.16	4.63	7.134	4.304	8.75	5.50
17.85	26.15	44.25	80.13	326.08	4.61	7.369	4.069	7.69	4.82
15.3	22.47	38.80	78.32	296.79	4.56	7.649	3.789	6.61	4.12
11 x 6 x 25.5	34.80	53.22	83.29	371.41	4.55	6.979	4.459	10.23	6.87
22.95	31.46	49.04	81.77	350.64	4.55	7.150	4.288	9.25	6.19
20.4	28.05	44.59	80.16	327.71	4.54	7.350	4.088	8.25	5.50
17.85	24.66	39.99	78.51	303.03	4.51	7.578	3.860	7.25	4.82
15.3	21.20	35.08	76.74	275.35	4.45	7.850	3.588	6.23	4.12
10 x 8 x 25.5	36.92	57.36	77.43	343.92	4.31	5.996	4.442	10.86	6.25
22.95	33.38	52.84	76.12	325.55	4.31	6.161	4.277	9.82	5.63



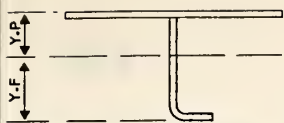
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 8 x 20.4	29.75	48.02	74.73	305.17	4.31	6.354	4.084	8.75	5.00
17.85	26.15	43.05	73.30	283.09	4.29	6.576	3.862	7.69	4.38
15.3	22.47	37.74	71.76	258.15	4.25	6.841	3.597	6.61	3.75
10 x 7 x 25.5	34.80	52.14	76.12	323.01	4.25	6.195	4.243	10.23	6.25
22.95	31.46	48.05	74.83	305.43	4.25	6.357	4.081	9.25	5.63
20.4	28.05	43.68	73.47	285.94	4.24	6.546	3.892	8.25	5.00
17.85	24.66	39.17	72.06	264.86	4.21	6.763	3.675	7.25	4.38
15.3	21.20	34.35	70.54	241.10	4.16	7.020	3.418	6.23	3.75
10 x 6 x 25.5	32.67	46.91	74.58	300.58	4.17	6.408	4.030	9.61	6.25
22.95	29.55	43.24	73.32	283.92	4.17	6.566	3.872	8.69	5.63
20.4	26.35	39.33	71.99	265.47	4.15	6.750	3.688	7.75	5.00
17.85	23.17	35.28	70.61	245.53	4.12	6.960	3.478	6.82	4.38
15.3	19.92	30.95	69.10	223.11	4.06	7.209	3.229	5.86	3.75



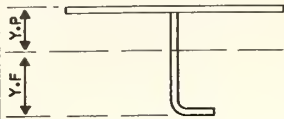
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 30.6	151.09	440.25	687.30	8,184.83	12.26	11.909	18.591	44.44	22.50
25.5	126.17	411.49	591.44	7,401.13	12.53	12.514	17.986	37.11	18.75
20.4	101.15	382.42	490.38	6,553.28	12.84	13.364	17.136	29.75	15.00
17.85	88.70	367.87	438.01	6,098.24	13.00	13.923	16.577	26.09	13.14
30 x 27 x 30.6	143.44	435.09	634.58	7,872.51	12.28	12.406	18.094	42.19	22.50
25.5	119.80	406.76	546.13	7,110.36	12.54	13.020	17.480	35.23	18.75
20.4	96.05	378.12	452.89	6,285.19	12.82	13.878	16.622	28.25	15.00
17.85	84.23	363.78	404.56	5,842.13	12.96	14.441	16.059	24.77	13.14
30 x 24 x 30.6	135.79	429.13	581.72	7,532.06	12.28	12.948	17.552	39.94	22.50
25.5	113.42	401.30	500.73	6,794.45	12.52	13.569	16.931	33.36	18.75
20.4	90.95	373.16	415.35	5,995.21	12.77	14.434	16.066	26.75	15.00
17.85	79.76	359.07	371.08	5,565.91	12.90	14.999	15.501	23.46	13.14
30 x 21 x 30.6	128.14	422.17	528.72	7,159.49	12.25	13.541	16.959	37.69	22.50
25.5	107.05	394.94	455.24	6,449.99	12.47	14.168	16.332	31.48	18.75
20.4	85.85	367.38	377.75	5,680.55	12.69	15.038	15.462	25.25	15.00
17.85	75.30	337.57	353.57	5,267.12	12.80	15.603	14.897	22.15	13.14
30 x 18 x 30.6	120.49	413.94	475.58	6,750.03	12.19	14.193	16.307	35.44	22.50
25.5	100.67	387.41	409.67	6,072.93	12.38	14.824	15.676	29.61	18.75
20.4	80.75	340.11	360.55	5,337.93	12.58	15.695	14.805	23.75	15.00
17.85	70.83	304.01	347.08	4,942.85	12.66	16.259	14.241	20.83	13.14
30 x 15 x 30.6	112.84	404.05	422.31	6,297.92	12.08	14.913	15.587	33.19	22.50
25.5	94.30	364.00	378.37	5,658.40	12.25	15.545	14.955	27.73	18.75
20.4	75.65	302.40	352.35	4,963.44	12.41	16.413	14.087	22.25	15.00
17.85	66.36	270.42	339.30	4,589.72	12.47	16.973	13.527	19.52	13.14
30 x 12 x 30.6	105.19	368.89	391.95	5,796.13	11.90	15.712	14.788	30.94	22.50
25.5	87.92	318.24	367.31	5,200.52	12.04	16.342	14.158	25.86	18.75
20.4	70.55	264.65	342.33	4,552.41	12.17	17.202	13.298	20.75	15.00
17.85	61.89	236.78	329.79	4,203.69	12.21	17.753	12.747	18.20	13.14
30 x 9 x 30.6	97.54	315.34	376.80	5,235.97	11.63	16.604	13.896	28.69	22.50
25.5	81.55	272.39	353.48	4,692.13	11.75	17.226	13.274	23.98	18.75
20.4	65.45	226.84	329.81	4,099.24	11.84	18.071	12.429	19.25	15.00
17.85	57.43	203.11	317.91	3,779.93	11.86	18.610	11.890	16.89	13.14
30 x 6 x 30.6	89.89	261.65	357.28	4,606.66	11.24	17.606	12.894	26.44	22.50
25.5	75.17	226.44	335.69	4,124.37	11.33	18.214	12.286	22.11	18.75
20.4	60.35	188.98	313.73	3,597.07	11.39	19.034	11.466	17.75	15.00
17.85	52.96	169.40	302.66	3,312.63	11.38	19.555	10.945	15.58	13.14
27 x 27 x 30.6	135.79	378.78	561.33	6,219.60	11.16	11.080	16.420	39.94	20.25
25.5	113.42	355.73	483.39	5,635.44	11.40	11.658	15.842	33.36	16.87
20.4	90.95	332.39	400.94	4,997.63	11.66	12.465	15.035	26.75	13.50
17.85	79.76	320.69	358.12	4,652.62	11.79	12.992	14.508	23.46	11.83
27 x 24 x 30.6	128.14	373.83	513.54	5,949.48	11.17	11.585	15.915	37.69	20.25
25.5	107.05	351.17	442.29	5,383.11	11.39	12.171	15.329	31.48	16.87
20.4	85.85	328.22	366.92	4,764.28	11.63	12.984	14.516	25.25	13.50
17.85	75.30	316.71	327.77	4,429.46	11.74	13.514	13.986	22.15	11.83
27 x 21 x 30.6	120.49	368.02	465.61	5,652.62	11.15	12.140	15.360	35.44	20.25
25.5	100.67	345.82	401.09	5,106.90	11.35	12.732	14.768	29.61	16.87
20.4	80.75	323.32	332.84	4,510.19	11.56	13.550	13.950	23.75	13.50
17.85	70.83	297.38	312.03	4,187.29	11.65	14.081	13.419	20.83	11.83
27 x 18 x 30.6	112.84	361.08	417.53	5,324.84	11.10	12.753	14.747	33.19	20.25
25.5	94.30	339.44	359.81	4,803.24	11.28	13.350	14.150	27.73	16.87
20.4	75.65	298.71	317.49	4,232.46	11.46	14.169	13.331	22.25	13.50
17.85	66.36	266.95	306.47	3,923.55	11.53	14.698	12.802	19.52	11.83



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 15 x 30.6	105.19	352.69	369.30	4,961.05	11.01	13.434	14.066	30.94	20.25
25.5	87.92	318.42	331.72	4,467.83	11.16	14.031	13.469	25.86	16.87
20.4	70.55	264.52	310.44	3,927.64	11.30	14.848	12.652	20.75	13.50
17.85	61.89	236.48	299.74	3,635.24	11.35	15.372	12.128	18.20	11.83
27 x 12 x 30.6	97.54	320.93	342.30	4,554.94	10.85	14.193	13.307	28.69	20.25
25.5	81.55	276.94	322.17	4,095.42	10.98	14.788	12.712	23.98	16.87
20.4	65.45	230.28	301.73	3,591.56	11.08	15.597	11.903	19.25	13.50
17.85	57.43	205.97	291.44	3,318.76	11.11	16.113	11.387	16.89	11.83
27 x 9 x 30.6	89.89	272.41	329.11	4,098.70	10.61	15.046	12.454	26.44	20.25
25.5	75.17	235.36	310.07	3,679.52	10.70	15.633	11.867	22.11	16.87
20.4	60.35	195.98	290.70	3,219.15	10.77	16.426	11.074	17.75	13.50
17.85	52.96	175.42	280.94	2,969.76	10.78	16.929	10.571	15.58	11.83
27 x 6 x 30.6	82.24	223.74	311.84	3,582.42	10.24	16.012	11.488	24.19	20.25
25.5	68.80	193.69	294.24	3,212.05	10.31	16.584	10.916	20.23	16.87
20.4	55.25	161.62	276.29	2,804.19	10.34	17.351	10.149	16.25	13.50
17.85	48.49	144.83	267.23	2,582.96	10.32	17.834	9.666	14.26	11.83
24 x 24 x 30.6	120.49	321.05	447.40	4,579.53	10.04	10.236	14.264	35.44	18.00
25.5	100.67	303.08	385.57	4,157.51	10.25	10.783	13.717	29.61	15.00
20.4	80.75	284.85	319.93	3,691.78	10.46	11.539	12.961	23.75	12.00
17.85	70.83	275.68	285.75	3,437.65	10.56	12.030	12.470	20.83	10.51
24 x 22 x 30.6	115.39	317.98	418.88	4,428.62	10.04	10.573	13.927	33.94	18.00
25.5	96.42	300.23	361.02	4,015.97	10.23	11.124	13.376	28.36	15.00
20.4	77.35	282.22	299.60	3,560.42	10.43	11.884	12.616	22.75	12.00
17.85	67.85	267.61	273.15	3,311.86	10.51	12.376	12.124	19.96	10.51
24 x 20 x 30.6	110.29	314.52	390.29	4,267.06	10.03	10.933	13.567	32.44	18.00
25.5	92.17	297.03	336.43	3,864.90	10.21	11.488	13.012	27.11	15.00
20.4	73.95	279.24	279.26	3,420.79	10.38	12.250	12.250	21.75	12.00
17.85	64.87	249.46	270.32	3,178.49	10.45	12.742	11.758	19.08	10.51
24 x 18 x 30.6	105.19	310.59	361.64	4,093.65	10.00	11.320	13.180	30.94	18.00
25.5	87.92	293.39	311.79	3,703.30	10.16	11.878	12.622	25.86	15.00
20.4	70.55	258.85	275.91	3,272.07	10.32	12.641	11.859	20.75	12.00
17.85	61.89	231.28	267.11	3,036.84	10.38	13.131	11.369	18.20	10.51
24 x 16 x 30.6	100.09	306.10	332.91	3,907.07	9.95	11.736	12.764	29.44	18.00
25.5	83.67	287.10	289.24	3,530.03	10.10	12.295	12.205	24.61	15.00
20.4	67.15	238.44	272.08	3,113.36	10.23	13.057	11.443	19.75	12.00
17.85	58.92	213.08	263.44	2,886.10	10.28	13.545	10.955	17.33	10.51
24 x 14 x 30.6	94.99	300.92	304.12	3,705.73	9.88	12.185	12.315	27.94	18.00
25.5	79.42	262.37	284.44	3,343.78	10.01	12.744	11.756	23.36	15.00
20.4	63.75	218.00	267.67	2,943.61	10.12	13.503	10.997	18.75	12.00
17.85	55.94	194.87	259.21	2,725.39	10.15	13.986	10.514	16.45	10.51
24 x 12 x 30.6	89.89	275.25	294.87	3,487.82	9.78	12.671	11.829	26.44	18.00
25.5	75.17	237.60	278.84	3,143.03	9.89	13.228	11.272	22.11	15.00
20.4	60.35	197.54	262.52	2,761.62	9.98	13.980	10.520	17.75	12.00
17.85	52.96	176.63	254.28	2,553.66	9.99	14.457	10.043	15.58	10.51
24 x 10 x 30.6	84.79	246.31	287.70	3,251.21	9.65	13.199	11.301	24.94	18.00
25.5	70.92	212.78	272.23	2,926.02	9.74	13.751	10.749	20.86	15.00
20.4	56.95	177.05	256.44	2,566.03	9.79	14.494	10.006	16.75	12.00
17.85	49.98	158.38	248.46	2,369.76	9.79	14.962	9.538	14.70	10.51
24 x 8 x 30.6	79.69	217.31	279.09	2,993.37	9.46	13.775	10.725	23.44	18.00
25.5	66.67	187.91	264.28	2,690.69	9.53	14.319	10.181	19.61	15.00
20.4	53.55	156.53	249.15	2,355.25	9.56	15.047	9.453	15.75	12.00
17.85	47.00	140.11	241.49	2,172.33	9.55	15.504	8.996	13.82	10.51

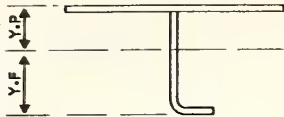


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 6 x 30.6	74.59	188.23	268.56	2,711.33	9.21	14.404	10.096	21.94	18.00
25.5	62.42	163.00	254.57	2,434.62	9.27	14.936	9.564	18.36	15.00
20.4	50.15	135.99	240.24	2,127.44	9.27	15.645	8.855	14.75	12.00
17.85	44.02	121.82	232.98	1,959.83	9.24	16.088	8.412	12.95	10.51
21 x 20 x 30.6	102.64	265.63	333.08	3,177.20	8.89	9.539	11.961	30.19	15.75
25.5	85.80	252.21	287.31	2,887.61	9.05	10.051	11.449	25.23	13.12
20.4	68.85	238.51	238.53	2,564.05	9.21	10.751	10.749	20.25	10.50
17.85	60.40	213.03	231.62	2,385.84	9.27	11.199	10.301	17.77	9.20
21 x 18 x 30.6	97.54	262.48	307.89	3,046.28	8.87	9.894	11.606	28.69	15.75
25.5	81.55	249.27	265.61	2,764.67	9.02	10.409	11.091	23.98	13.12
20.4	65.45	220.53	235.79	2,450.00	9.15	11.110	10.390	19.25	10.50
17.85	57.43	197.00	228.99	2,276.77	9.20	11.557	9.943	16.89	9.20
21 x 16 x 30.6	92.44	258.85	282.62	2,904.81	8.84	10.278	11.222	27.19	15.75
25.5	77.30	243.86	245.88	2,632.34	8.97	10.794	10.706	22.73	13.12
20.4	62.05	202.53	232.65	2,327.88	9.08	11.494	10.006	18.25	10.50
17.85	54.45	180.95	225.95	2,160.35	9.11	11.939	9.561	16.01	9.20
21 x 14 x 30.6	87.34	254.63	257.28	2,751.44	8.78	10.694	10.806	25.69	15.75
25.5	73.05	222.07	241.95	2,489.51	8.89	11.210	10.290	21.48	13.12
20.4	58.65	184.50	228.99	2,196.79	8.98	11.907	9.593	17.25	10.50
17.85	51.47	164.88	222.43	2,035.82	9.00	12.347	9.153	15.14	9.20
21 x 12 x 30.6	82.24	231.87	249.65	2,584.63	8.69	11.147	10.353	24.19	15.75
25.5	68.80	200.23	237.31	2,334.88	8.79	11.661	9.839	20.23	13.12
20.4	55.25	166.45	224.68	2,055.72	8.85	12.351	9.149	16.25	10.50
17.85	48.49	148.79	218.28	1,902.29	8.85	12.785	8.715	14.26	9.20
21 x 10 x 30.6	77.14	206.38	243.70	2,402.52	8.57	11.641	9.859	22.69	15.75
25.5	64.55	178.34	231.77	2,166.91	8.65	12.150	9.350	18.98	13.12
20.4	51.85	148.36	219.54	1,903.47	8.68	12.830	8.670	15.25	10.50
17.85	45.51	132.68	213.34	1,758.77	8.67	13.256	8.244	13.39	9.20
21 x 8 x 30.6	72.04	180.81	236.45	2,202.89	8.40	12.183	9.317	21.19	15.75
25.5	60.30	156.40	225.02	1,983.80	8.46	12.684	8.816	17.73	13.12
20.4	48.45	130.25	213.30	1,738.68	8.47	13.349	8.151	14.25	10.50
17.85	42.53	116.55	207.33	1,604.07	8.44	13.763	7.737	12.51	9.20
21 x 6 x 30.6	66.94	155.17	227.42	1,983.10	8.17	12.780	8.720	19.69	15.75
25.5	56.05	134.42	216.64	1,783.41	8.21	13.268	8.232	16.48	13.12
20.4	45.05	112.11	205.55	1,559.70	8.19	13.912	7.588	13.25	10.50
17.85	39.56	100.40	199.89	1,436.85	8.15	14.312	7.188	11.63	9.20
18 x 18 x 30.6	89.89	216.77	256.26	2,172.52	7.72	8.478	10.022	26.44	13.50
25.5	75.17	207.08	221.26	1,978.89	7.85	8.944	9.556	22.11	11.25
20.4	60.35	183.76	197.14	1,759.49	7.96	9.575	8.925	17.75	9.00
15.3	45.42	143.41	186.86	1,501.08	8.02	10.467	8.033	13.36	6.75
18 x 16 x 30.6	84.79	213.94	234.52	2,069.74	7.70	8.826	9.674	24.94	13.50
25.5	70.92	202.51	204.41	1,881.96	7.81	9.293	9.207	20.86	11.25
20.4	56.95	168.21	194.63	1,669.27	7.90	9.923	8.577	16.75	9.00
15.3	42.87	131.31	184.50	1,419.19	7.92	10.808	7.692	12.61	6.75
18 x 14 x 30.6	79.69	210.61	212.69	1,957.75	7.65	9.205	9.295	23.44	13.50
25.5	66.67	183.70	201.28	1,776.84	7.75	9.672	8.828	19.61	11.25
20.4	53.55	152.64	191.69	1,572.04	7.81	10.299	8.201	15.75	9.00
15.3	40.32	119.20	181.73	1,331.69	7.81	11.172	7.328	11.86	6.75
18 x 12 x 30.6	74.59	190.79	206.66	1,835.24	7.58	9.619	8.881	21.94	13.50
25.5	62.42	164.85	197.56	1,662.47	7.66	10.085	8.415	18.36	11.25
20.4	50.15	137.03	188.20	1,466.95	7.70	10.705	7.795	14.75	9.00
15.3	37.77	107.07	178.44	1,237.97	7.66	11.562	6.938	11.11	6.75



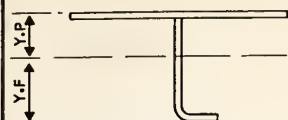
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 10 x 30.6	69.49	168.80	201.86	1,700.67	7.47	10.075	8.425	20.44	13.50
25.5	58.17	145.94	193.05	1,537.55	7.53	10.536	7.964	17.11	11.25
20.4	46.75	121.40	183.97	1,353.02	7.55	11.145	7.355	13.75	9.00
15.3	35.22	94.93	174.48	1,137.35	7.47	11.981	6.519	10.36	6.75
18 x 8 x 30.6	64.39	146.74	195.92	1,552.15	7.32	10.578	7.922	18.94	13.50
25.5	53.92	126.98	187.48	1,400.55	7.36	11.030	7.470	15.86	11.25
20.4	43.35	105.73	178.76	1,229.07	7.35	11.624	6.876	12.75	9.00
15.3	32.67	82.77	169.60	1,029.03	7.24	12.432	6.068	9.61	6.75
18 x 6 x 30.6	59.29	124.59	188.39	1,387.40	7.11	11.135	7.365	17.44	13.50
25.5	49.67	107.97	180.43	1,249.65	7.13	11.574	6.926	14.61	11.25
20.4	39.95	90.04	172.17	1,093.72	7.09	12.147	6.353	11.75	9.00
15.3	30.12	70.60	163.44	912.09	6.95	12.919	5.581	8.86	6.75
18 x 4 x 30.6	54.19	102.37	178.52	1,203.60	6.81	11.758	6.742	15.94	13.50
25.5	45.42	88.91	171.21	1,082.60	6.81	12.177	6.323	13.36	11.25
20.4	36.55	74.32	163.57	945.34	6.75	12.721	5.779	10.75	9.00
15.3	27.57	58.41	155.44	785.47	6.59	13.447	5.053	8.11	6.75
16 x 12 x 30.6	69.49	164.69	179.22	1,416.08	6.82	8.598	7.902	20.44	12.00
25.5	58.17	142.38	172.04	1,285.41	6.89	9.028	7.472	17.11	10.00
20.4	46.75	118.37	164.60	1,136.09	6.92	9.598	6.902	13.75	8.00
15.3	35.22	92.45	156.78	959.56	6.87	10.380	6.120	10.36	6.00
16 x 10 x 30.6	64.39	145.08	175.15	1,309.32	6.73	9.025	7.475	18.94	12.00
25.5	53.92	125.49	168.19	1,185.82	6.77	9.450	7.050	15.86	10.00
20.4	43.35	104.39	160.97	1,044.84	6.78	10.009	6.491	12.75	8.00
15.3	32.67	81.59	153.33	878.66	6.69	10.770	5.730	9.61	6.00
16 x 8 x 30.6	59.29	125.39	170.07	1,190.88	6.59	9.498	7.002	17.44	12.00
25.5	49.67	108.55	163.39	1,076.12	6.61	9.914	6.586	14.61	10.00
20.4	39.95	90.38	156.43	945.20	6.59	10.458	6.042	11.75	8.00
15.3	30.12	70.72	149.04	791.33	6.48	11.190	5.310	8.86	6.00
16 x 6 x 30.6	54.19	105.61	163.52	1,058.76	6.39	10.025	6.475	15.94	12.00
25.5	45.42	91.55	157.21	954.68	6.39	10.428	6.072	13.36	10.00
20.4	36.55	76.35	150.61	835.97	6.35	10.950	5.550	10.75	8.00
15.3	27.57	59.83	143.55	696.77	6.20	11.646	4.854	8.11	6.00
15 x 12 x 30.6	66.94	152.03	165.87	1,229.51	6.44	8.087	7.413	19.69	11.25
25.5	56.05	131.48	159.57	1,117.30	6.50	8.498	7.002	16.48	9.37
20.4	45.05	109.32	153.02	988.37	6.52	9.041	6.459	13.25	7.50
15.3	33.95	85.37	146.09	835.18	6.46	9.783	5.717	9.98	5.62
15 x 11 x 30.6	64.39	142.84	164.11	1,183.71	6.40	8.287	7.213	18.94	11.25
25.5	53.92	123.55	157.90	1,074.39	6.45	8.696	6.804	15.86	9.37
20.4	43.35	102.76	151.44	948.87	6.46	9.234	6.266	12.75	7.50
15.3	32.67	80.27	144.58	799.99	6.39	9.967	5.533	9.61	5.62
15 x 10 x 30.6	61.84	133.62	162.16	1,135.47	6.35	8.498	7.002	18.19	11.25
25.5	51.80	115.61	156.05	1,029.36	6.39	8.903	6.597	15.23	9.37
20.4	41.65	96.18	149.67	907.60	6.39	9.436	6.064	12.25	7.50
15.3	31.40	75.16	142.89	763.42	6.30	10.157	5.343	9.23	5.62
15 x 9 x 30.6	59.29	124.38	159.96	1,084.60	6.29	8.720	6.780	17.44	11.25
25.5	49.67	107.66	153.96	982.04	6.32	9.122	6.378	14.61	9.37
20.4	39.95	89.60	147.70	864.43	6.30	9.647	5.853	11.75	7.50
15.3	30.12	70.05	141.01	725.40	6.20	10.356	5.144	8.86	5.62
15 x 8 x 30.6	56.74	115.13	157.49	1,030.87	6.22	8.954	6.546	16.69	11.25
25.5	47.55	99.69	151.62	932.25	6.23	9.351	6.149	13.98	9.37
20.4	38.25	83.01	145.47	819.22	6.21	9.868	5.632	11.25	7.50
15.3	28.85	64.94	138.89	685.84	6.09	10.562	4.938	8.48	5.62

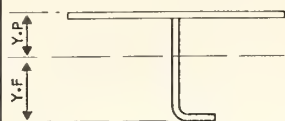


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	105.85	154.67	974.04	6.13	9.202	6.298	15.94	11.25
25.5	45.42	91.71	148.94	879.80	6.14	9.593	5.907	13.36	9.37
20.4	36.55	76.42	142.94	771.84	6.10	10.100	5.400	10.75	7.50
15.3	27.57	59.82	136.48	644.64	5.97	10.777	4.723	8.11	5.62
14 x 10 x 30.6	59.29	122.43	149.40	975.68	5.96	7.969	6.531	17.44	10.50
25.5	49.67	105.97	144.08	885.40	6.00	8.355	6.145	14.61	8.75
20.4	39.95	88.18	138.52	781.24	5.99	8.860	5.640	11.75	7.00
15.3	30.12	68.89	132.54	657.30	5.90	9.541	4.959	8.86	5.25
14 x 9 x 30.6	56.74	113.80	147.40	931.17	5.91	8.183	6.317	16.69	10.50
25.5	47.55	98.53	142.18	843.90	5.93	8.565	5.935	13.98	8.75
20.4	38.25	82.02	136.70	743.29	5.91	9.062	5.437	11.25	7.00
15.3	28.85	64.11	130.80	623.82	5.81	9.731	4.769	8.48	5.25
14 x 8 x 30.6	54.19	105.15	145.13	884.10	5.84	8.408	6.092	15.94	10.50
25.5	45.42	91.08	140.02	800.18	5.85	8.785	5.715	13.36	8.75
20.4	36.55	75.85	134.64	703.51	5.82	9.275	5.225	10.75	7.00
15.3	27.57	59.32	128.82	588.96	5.70	9.928	4.572	8.11	5.25
14 x 7 x 30.6	51.64	96.47	142.54	834.22	5.76	8.648	5.852	15.19	10.50
25.5	43.30	83.61	137.56	754.05	5.76	9.018	5.482	12.73	8.75
20.4	34.85	69.68	132.29	661.77	5.72	9.498	5.002	10.25	7.00
15.3	26.30	54.53	126.58	552.62	5.58	10.134	4.366	7.73	5.25
13 x 9 x 30.6	54.19	103.49	135.06	791.01	5.52	7.643	5.857	15.94	9.75
25.5	45.42	89.65	130.57	717.58	5.54	8.004	5.496	13.36	8.12
20.4	36.55	74.64	125.83	632.46	5.52	8.474	5.026	10.75	6.50
15.3	27.57	58.34	120.66	530.88	5.41	9.100	4.400	8.11	4.87
13 x 8 x 30.6	51.64	95.45	133.00	750.18	5.46	7.860	5.640	15.19	9.75
25.5	43.30	82.71	128.61	679.57	5.47	8.216	5.284	12.73	8.12
20.4	34.85	68.90	123.94	597.80	5.43	8.677	4.823	10.25	6.50
15.3	26.30	53.88	118.84	500.46	5.31	9.289	4.211	7.73	4.87
13 x 7 x 30.6	49.09	87.38	130.64	706.84	5.38	8.089	5.411	14.44	9.75
25.5	41.17	75.76	126.35	639.40	5.38	8.439	5.061	12.11	8.12
20.4	33.15	63.15	121.78	561.38	5.33	8.890	4.610	9.75	6.50
15.3	25.02	49.41	116.75	468.72	5.20	9.485	4.015	7.36	4.87
12 x 9 x 30.6	51.64	93.46	122.95	663.74	5.13	7.102	5.398	15.19	9.00
25.5	43.30	81.01	119.15	602.77	5.15	7.441	5.059	12.73	7.50
20.4	34.85	67.47	115.09	531.66	5.12	7.880	4.620	10.25	6.00
15.3	26.30	52.73	110.61	446.35	5.02	8.465	4.035	7.73	4.50
12 x 8 x 30.6	49.09	86.03	121.10	628.72	5.07	7.308	5.192	14.44	9.00
25.5	41.17	74.59	117.36	570.09	5.08	7.643	4.857	12.11	7.50
20.4	33.15	62.15	113.36	501.80	5.04	8.074	4.426	9.75	6.00
15.3	25.02	48.60	108.93	420.10	4.92	8.643	3.857	7.36	4.50
12 x 7 x 30.6	46.54	78.58	118.96	591.50	5.00	7.528	4.972	13.69	9.00
25.5	39.05	68.17	115.31	535.51	4.99	7.856	4.644	11.48	7.50
20.4	31.45	56.83	111.38	470.39	4.94	8.277	4.223	9.25	6.00
15.3	23.75	44.47	107.00	392.69	4.81	8.830	3.670	6.98	4.50
12 x 6 x 30.6	43.99	71.10	116.46	551.84	4.90	7.761	4.739	12.94	9.00
25.5	36.92	61.73	112.91	498.87	4.89	8.082	4.418	10.86	7.50
20.4	29.75	51.50	109.08	437.30	4.83	8.491	4.009	8.75	6.00
15.3	22.47	40.34	104.77	364.05	4.68	9.025	3.475	6.61	4.50



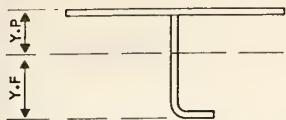
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MOOULUS		I	r	YF	YP	BEAM OIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 30.6	151.09	509.16	708.96	9,056.96	12.59	12.775	17.788	44.44	22.50
25.5	126.17	480.53	609.36	8,211.21	12.84	13.475	17.088	37.11	18.75
20.4	101.15	451.54	504.29	7,280.99	13.10	14.438	16.125	29.75	15.00
17.85	88.70	436.99	449.84	6,774.63	13.22	15.060	15.503	26.09	13.14
30 x 27 x 30.6	143.44	503.30	654.70	8,696.71	12.59	13.284	17.279	42.19	22.50
25.5	119.80	475.09	562.79	7,873.59	12.82	13.990	16.573	35.23	18.75
20.4	96.05	446.52	465.83	6,967.93	13.05	14.958	15.605	28.25	15.00
17.85	84.23	415.58	432.18	6,475.03	13.15	15.581	14.982	24.77	13.14
30 x 24 x 30.6	135.79	496.53	600.31	8,305.65	12.56	13.836	16.727	39.94	22.50
25.5	113.42	468.82	516.14	7,508.46	12.77	14.547	16.016	33.36	18.75
20.4	90.95	427.32	440.74	6,631.06	12.97	15.518	15.045	26.75	15.00
17.85	79.76	381.28	426.64	6,153.65	13.05	16.139	14.424	23.46	13.14
30 x 21 x 30.6	128.14	488.63	545.80	7,879.66	12.51	14.437	16.126	37.69	22.50
25.5	107.05	461.50	469.41	7,112.33	12.69	15.152	15.411	31.48	18.75
20.4	85.85	388.77	434.00	6,267.55	12.86	16.122	14.441	25.25	15.00
17.85	75.30	346.95	420.18	5,808.01	12.91	16.740	13.823	22.15	13.14
30 x 18 x 30.6	120.49	479.29	491.16	7,413.83	12.41	15.095	15.468	35.44	22.50
25.5	100.67	422.59	452.86	6,681.08	12.57	15.810	14.753	29.61	18.75
20.4	80.75	350.17	426.03	5,874.10	12.70	16.775	13.788	23.75	15.00
17.85	70.83	312.59	412.55	5,435.27	12.74	17.388	13.175	20.83	13.14
30 x 15 x 30.6	112.84	436.39	468.07	6,902.31	12.27	15.817	14.746	33.19	22.50
25.5	94.30	375.70	442.48	6,209.81	12.40	16.529	14.034	27.73	18.75
20.4	75.65	311.52	416.49	5,446.85	12.49	17.485	13.078	22.25	15.00
17.85	66.36	278.19	403.40	5,032.10	12.50	18.089	12.474	19.52	13.14
30 x 12 x 30.6	105.19	381.50	454.35	6,338.03	12.05	16.613	13.950	30.94	22.50
25.5	87.92	328.72	429.80	5,692.69	12.15	17.318	13.245	25.86	18.75
20.4	70.55	272.82	404.83	4,981.27	12.21	18.258	12.305	20.75	15.00
17.85	61.89	243.76	392.24	4,594.62	12.20	18.849	11.714	18.20	13.14
30 x 9 x 30.6	97.54	326.48	437.18	5,712.36	11.75	17.497	13.066	28.69	22.50
25.5	81.55	281.66	413.94	5,122.68	11.82	18.188	12.375	23.98	18.75
20.4	65.45	234.08	390.27	4,471.93	11.84	19.104	11.459	19.25	15.00
17.85	57.43	209.29	378.32	4,118.26	11.80	19.677	10.886	16.89	13.14
30 x 6 x 30.6	89.89	271.34	415.08	5,014.73	11.32	18.482	12.081	26.44	22.50
25.5	75.17	234.52	393.56	4,491.23	11.36	19.151	11.412	22.11	18.75
20.4	60.35	195.29	371.58	3,912.38	11.34	20.034	10.529	17.75	15.00
17.85	52.96	174.79	360.45	3,597.59	11.28	20.582	9.981	15.58	13.14
27 x 27 x 30.6	135.79	440.56	579.01	6,896.09	11.45	11.910	15.653	39.94	20.25
25.5	113.42	417.62	497.88	6,260.03	11.66	12.573	14.990	33.36	16.87
20.4	90.95	394.33	412.07	5,554.06	11.87	13.478	14.085	26.75	13.50
17.85	79.76	367.53	382.62	5,167.03	11.96	14.059	13.504	23.46	11.83
27 x 24 x 30.6	128.14	434.89	529.82	6,583.23	11.43	12.425	15.138	37.69	20.25
25.5	107.05	412.34	455.65	5,966.14	11.62	13.094	14.469	31.48	16.87
20.4	85.85	377.18	389.42	5,281.16	11.80	14.002	13.561	25.25	13.50
17.85	75.30	336.45	377.89	4,905.83	11.87	14.581	12.982	22.15	11.83
27 x 21 x 30.6	120.49	428.23	480.49	6,241.12	11.39	12.989	14.574	35.44	20.25
25.5	100.67	406.13	413.32	5,646.20	11.56	13.661	13.902	29.61	16.87
20.4	80.75	342.25	383.67	4,985.79	11.70	14.568	12.995	23.75	13.50
17.85	70.83	305.34	372.35	4,624.14	11.75	15.144	12.419	20.83	11.83
27 x 18 x 30.6	112.84	420.30	431.04	5,865.45	11.31	13.608	13.955	33.19	20.25
25.5	94.30	370.91	398.75	5,296.56	11.45	14.280	13.283	27.73	16.87
20.4	75.65	307.26	376.81	4,665.05	11.56	15.183	12.380	22.25	13.50
17.85	66.36	274.19	365.76	4,319.47	11.58	15.753	11.810	19.52	11.83



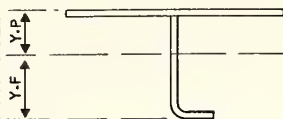
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		r	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 15 x 30.6	105.19	381.45	410.70	5,451.03	11.18	14.290	13.273	30.94	20.25
25.5	87.92	328.41	389.81	4,912.91	11.29	14.960	12.603	25.86	16.87
20.4	70.55	272.22	368.53	4,315.53	11.36	15.853	11.710	20.75	13.50
17.85	61.89	243.01	357.79	3,988.86	11.37	16.414	11.149	18.20	11.83
27 x 12 x 30.6	97.54	331.72	398.82	4,991.53	10.99	15.047	12.516	28.69	20.25
25.5	81.55	285.83	378.77	4,490.03	11.07	15.709	11.854	23.98	16.87
20.4	65.45	237.14	358.31	3,933.16	11.10	16.586	10.977	19.25	13.50
17.85	57.43	211.79	347.96	3,628.88	11.08	17.134	10.429	16.89	11.83
27 x 9 x 30.6	89.89	281.86	383.77	4,479.19	10.70	15.891	11.672	26.44	20.25
25.5	75.17	243.16	364.78	4,021.55	10.75	16.539	11.024	22.11	16.87
20.4	60.35	202.00	345.38	3,513.10	10.75	17.391	10.172	17.75	13.50
17.85	52.96	180.54	335.55	3,235.40	10.70	17.921	9.642	15.58	11.83
27 x 6 x 30.6	82.24	231.87	364.05	3,904.31	10.29	16.838	10.725	24.19	20.25
25.5	68.80	200.41	346.51	3,499.71	10.31	17.463	10.100	20.23	16.87
20.4	55.25	166.82	328.51	3,049.48	10.27	18.280	9.283	16.25	13.50
17.85	48.49	149.25	319.36	2,803.55	10.20	18.784	8.779	14.26	11.83
24 x 24 x 30.6	120.49	375.69	461.42	5,086.56	10.28	11.024	13.539	35.44	18.00
25.5	100.67	357.81	396.96	4,622.34	10.46	11.644	12.919	29.61	15.00
20.4	80.75	328.57	339.59	4,101.90	10.61	12.484	12.079	23.75	12.00
17.85	70.83	293.02	330.40	3,814.45	10.67	13.018	11.545	20.83	10.51
24 x 22 x 30.6	115.39	372.13	432.06	4,910.93	10.26	11.366	13.197	33.94	18.00
25.5	96.42	354.47	371.73	4,456.90	10.42	11.990	12.573	28.36	15.00
20.4	77.35	307.73	336.47	3,947.98	10.56	12.829	11.734	22.75	12.00
17.85	67.85	274.45	327.37	3,667.08	10.60	13.362	11.201	19.96	10.51
24 x 20 x 30.6	110.29	368.13	402.64	4,723.62	10.23	11.732	12.831	32.44	18.00
25.5	92.17	346.46	350.72	4,281.06	10.37	12.356	12.207	27.11	15.00
20.4	73.95	286.86	332.96	3,785.12	10.49	13.195	11.368	21.75	12.00
17.85	64.87	255.87	323.98	3,511.59	10.52	13.724	10.839	19.08	10.51
24 x 18 x 30.6	105.19	363.60	373.15	4,523.43	10.18	12.122	12.441	30.94	18.00
25.5	87.92	321.16	346.47	4,093.82	10.31	12.747	11.816	25.86	15.00
20.4	70.55	265.98	328.98	3,612.52	10.40	13.582	10.981	20.75	12.00
17.85	61.89	237.27	320.13	3,347.27	10.41	14.107	10.456	18.20	10.51
24 x 16 x 30.6	100.09	343.60	358.42	4,308.99	10.12	12.541	12.022	29.44	18.00
25.5	83.67	295.81	341.61	3,894.02	10.22	13.164	11.399	24.61	15.00
20.4	67.15	245.07	324.44	3,429.27	10.28	13.993	10.570	19.75	12.00
17.85	58.92	218.66	315.75	3,173.36	10.28	14.513	10.050	17.33	10.51
24 x 14 x 30.6	94.99	313.99	352.44	4,078.71	10.02	12.990	11.573	27.94	18.00
25.5	79.42	270.42	336.01	3,680.37	10.11	13.610	10.953	23.36	15.00
20.4	63.75	224.13	319.21	3,234.36	10.14	14.431	10.132	18.75	12.00
17.85	55.94	200.03	310.69	2,988.99	10.13	14.943	9.620	16.45	10.51
24 x 12 x 30.6	89.89	284.31	345.45	3,830.78	9.90	13.474	11.089	26.44	18.00
25.5	75.17	244.99	329.47	3,451.36	9.96	14.088	10.475	22.11	15.00
20.4	60.35	203.18	313.11	3,026.64	9.97	14.897	9.666	17.75	12.00
17.85	52.96	181.39	304.80	2,793.19	9.94	15.399	9.164	15.58	10.51
24 x 10 x 30.6	84.79	254.57	337.20	3,563.07	9.73	13.996	10.567	24.94	18.00
25.5	70.92	219.52	321.75	3,205.28	9.78	14.601	9.962	20.86	15.00
20.4	56.95	182.20	305.91	2,804.81	9.76	15.394	9.169	16.75	12.00
17.85	49.98	162.73	297.86	2,584.85	9.72	15.885	8.678	14.70	10.51
24 x 8 x 30.6	79.69	224.77	327.28	3,273.14	9.52	14.562	10.001	23.44	18.00
25.5	66.67	194.01	312.49	2,940.16	9.54	15.154	9.409	19.61	15.00
20.4	53.55	161.19	297.29	2,567.37	9.50	15.927	8.636	15.75	12.00
17.85	47.00	144.05	289.54	2,362.75	9.44	16.403	8.160	13.82	10.51



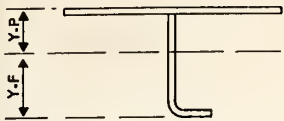
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 6 x 30.6	74.59	194.91	315.15	2,958.08	9.24	15.177	9.386	21.94	18.00
25.5	62.42	168.46	301.18	2,653.68	9.25	15.752	8.811	18.36	15.00
20.4	50.15	140.17	286.77	2,312.61	9.18	16.499	8.064	14.75	12.00
17.85	44.02	125.35	279.40	2,125.46	9.11	16.956	7.607	12.95	10.51
21 x 20 x 30.6	102.64	312.86	343.43	3,530.20	9.08	10.279	11.284	30.19	15.75
25.5	85.80	295.62	299.50	3,208.00	9.20	10.852	10.711	25.23	13.12
20.4	68.85	244.74	285.81	2,842.91	9.29	11.616	9.947	20.25	10.50
17.85	60.40	218.24	278.85	2,639.85	9.31	12.096	9.467	17.77	9.20
21 x 18 x 30.6	97.54	309.18	317.50	3,377.66	9.04	10.638	10.925	28.69	15.75
25.5	81.55	273.34	296.02	3,064.39	9.14	11.211	10.352	23.98	13.12
20.4	65.45	226.33	282.52	2,709.66	9.21	11.972	9.591	19.25	10.50
17.85	57.43	201.85	275.65	2,512.60	9.22	12.448	9.115	16.89	9.20
21 x 16 x 30.6	92.44	291.50	304.95	3,213.63	8.98	11.025	10.538	27.19	15.75
25.5	77.30	251.01	292.02	2,910.63	9.07	11.596	9.967	22.73	13.12
20.4	62.05	207.90	278.74	2,567.79	9.11	12.351	9.212	18.25	10.50
17.85	54.45	185.44	271.98	2,377.58	9.10	12.821	8.742	16.01	9.20
21 x 14 x 30.6	87.34	265.43	300.02	3,036.79	8.90	11.441	10.122	25.69	15.75
25.5	73.05	228.64	287.37	2,745.63	8.97	12.009	9.554	21.48	13.12
20.4	58.65	189.45	274.36	2,416.44	8.99	12.755	8.808	17.25	10.50
17.85	51.47	169.01	267.72	2,234.06	8.96	13.218	8.345	15.14	9.20
21 x 12 x 30.6	82.24	239.30	294.22	2,845.56	8.79	11.891	9.672	24.19	15.75
25.5	68.80	206.22	281.89	2,568.09	8.83	12.453	9.110	20.23	13.12
20.4	55.25	170.96	269.20	2,254.63	8.83	13.188	8.375	16.25	10.50
17.85	48.49	152.57	262.71	2,081.20	8.79	13.641	7.922	14.26	9.20
21 x 10 x 30.6	77.14	213.10	287.28	2,638.11	8.64	12.380	9.183	22.69	15.75
25.5	64.55	183.77	275.36	2,376.54	8.66	12.932	8.631	18.98	13.12
20.4	51.85	152.46	263.05	2,081.23	8.63	13.651	7.912	15.25	10.50
17.85	45.51	136.11	256.74	1,918.08	8.58	14.092	7.471	13.39	9.20
21 x 8 x 30.6	72.04	186.83	278.83	2,412.29	8.44	12.912	8.651	21.19	15.75
25.5	60.30	161.27	267.41	2,169.25	8.45	13.451	8.112	17.73	13.12
20.4	48.45	133.93	255.58	1,894.96	8.39	14.149	7.414	14.25	10.50
17.85	42.53	119.63	249.50	1,743.60	8.32	14.575	6.988	12.51	9.20
21 x 6 x 30.6	66.94	160.50	268.33	2,165.55	8.18	13.493	8.070	19.69	15.75
25.5	56.05	138.73	257.55	1,944.18	8.17	14.014	7.549	16.48	13.12
20.4	45.05	115.38	246.33	1,694.31	8.08	14.685	6.878	13.25	10.50
17.85	39.56	103.14	240.54	1,556.55	8.00	15.092	6.471	11.63	9.20
18 x 18 x 30.6	89.89	257.05	264.08	2,417.99	7.86	9.156	9.407	26.44	13.50
25.5	75.17	227.46	247.39	2,199.82	7.95	9.671	8.892	22.11	11.25
20.4	60.35	188.35	237.41	1,949.62	8.00	10.351	8.212	17.75	9.00
15.3	45.42	146.45	226.93	1,652.24	7.97	11.282	7.281	13.36	6.75
18 x 16 x 30.6	84.79	241.69	253.70	2,297.64	7.82	9.507	9.056	24.94	13.50
25.5	70.92	208.21	244.20	2,086.22	7.89	10.020	8.543	20.86	11.25
20.4	56.95	172.44	234.36	1,844.10	7.92	10.694	7.869	16.75	9.00
15.3	42.87	134.11	223.99	1,557.17	7.85	11.611	6.952	12.61	6.75
18 x 14 x 30.6	79.69	219.23	249.77	2,167.29	7.75	9.886	8.677	23.44	13.50
25.5	66.67	188.91	240.45	1,963.83	7.80	10.396	8.167	19.61	11.25
20.4	53.55	156.50	230.78	1,731.16	7.80	11.062	7.501	15.75	9.00
15.3	40.32	121.76	220.56	1,456.30	7.70	11.960	6.603	11.86	6.75
18 x 12 x 30.6	74.59	196.70	245.09	2,025.66	7.65	10.298	8.265	21.94	13.50
25.5	62.42	169.56	235.99	1,831.58	7.68	10.802	7.761	18.36	11.25
20.4	50.15	140.54	226.53	1,609.99	7.66	11.456	7.107	14.75	9.00
15.3	37.77	109.40	216.49	1,349.06	7.53	12.332	6.231	11.11	6.75



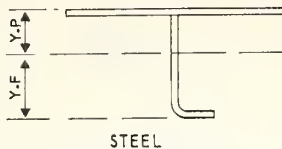
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 10 x 30.6	69.49	174.10	239.42	1,871.19	7.52	10.748	7.815	20.44	13.50
25.5	58.17	150.17	230.60	1,688.24	7.53	11.242	7.321	17.11	11.25
20.4	46.75	124.55	221.40	1,479.64	7.48	11.880	6.683	13.75	9.00
15.3	35.22	97.03	211.59	1,234.84	7.32	12.727	5.836	10.36	6.75
18 x 8 x 30.6	64.39	151.43	232.42	1,702.08	7.34	11.240	7.323	18.94	13.50
25.5	53.92	130.74	223.95	1,532.34	7.33	11.721	6.842	15.86	11.25
20.4	43.35	108.54	215.09	1,339.05	7.26	12.337	6.226	12.75	9.00
15.3	32.67	84.64	205.56	1,112.94	7.07	13.149	5.414	9.61	6.75
18 x 6 x 30.6	59.29	128.69	223.55	1,516.12	7.10	11.781	6.782	17.44	13.50
25.5	49.67	111.26	215.55	1,362.16	7.07	12.243	6.320	14.61	11.25
20.4	39.95	92.50	207.12	1,186.94	6.97	12.832	5.731	11.75	9.00
15.3	30.12	72.24	197.99	982.54	6.75	13.600	4.963	8.86	6.75
18 x 4 x 30.6	54.19	105.88	211.94	1,310.68	6.77	12.379	6.184	15.94	13.50
25.5	45.42	91.73	204.57	1,175.64	6.72	12.816	5.747	13.36	11.25
20.4	36.55	76.43	196.75	1,021.85	6.60	13.369	5.194	10.75	9.00
15.3	27.57	59.84	188.17	842.74	6.37	14.084	4.479	8.11	6.75
16 x 12 x 30.6	69.49	169.67	213.50	1,565.84	6.88	9.229	7.334	20.44	12.00
25.5	58.17	146.31	206.30	1,417.81	6.90	9.691	6.872	17.11	10.00
20.4	46.75	121.26	198.75	1,247.41	6.87	10.287	6.276	13.75	8.00
15.3	35.22	94.35	190.62	1,045.34	6.74	11.079	5.484	10.36	6.00
16 x 10 x 30.6	64.39	149.51	208.65	1,442.60	6.76	9.649	6.914	18.94	12.00
25.5	53.92	128.99	201.65	1,303.02	6.76	10.101	6.462	15.86	10.00
20.4	43.35	106.98	194.29	1,142.69	6.70	10.681	5.882	12.75	8.00
15.3	32.67	83.30	186.30	953.37	6.54	11.446	5.117	9.61	6.00
16 x 8 x 30.6	59.29	129.28	202.59	1,307.10	6.59	10.111	6.452	17.44	12.00
25.5	49.67	111.63	195.86	1,177.72	6.57	10.550	6.013	14.61	10.00
20.4	39.95	92.67	188.73	1,029.40	6.49	11.109	5.454	11.75	8.00
15.3	30.12	72.23	180.94	854.99	6.30	11.838	4.725	8.86	6.00
16 x 6 x 30.6	54.19	108.97	194.79	1,157.39	6.36	10.621	5.942	15.94	12.00
25.5	45.42	94.23	188.42	1,040.38	6.32	11.041	5.522	13.36	10.00
20.4	36.55	78.33	181.62	906.44	6.22	11.572	4.991	10.75	8.00
15.3	27.57	61.15	174.10	749.52	6.00	12.258	4.305	8.11	6.00
15 x 12 x 30.6	66.94	156.56	198.05	1,360.83	6.48	8.692	6.871	19.69	11.25
25.5	56.05	135.04	191.73	1,233.13	6.50	9.131	6.432	16.48	9.37
20.4	45.05	111.94	185.05	1,085.47	6.47	9.697	5.866	13.25	7.50
15.3	33.95	87.08	177.79	909.70	6.34	10.446	5.117	9.98	5.62
15 x 11 x 30.6	64.39	147.11	195.94	1,307.69	6.43	8.889	6.674	18.94	11.25
25.5	53.92	126.92	189.70	1,183.44	6.44	9.324	6.239	15.86	9.37
20.4	43.35	105.23	183.09	1,039.96	6.40	9.883	5.680	12.75	7.50
15.3	32.67	81.89	175.88	869.56	6.25	10.619	4.944	9.61	5.62
15 x 10 x 30.6	61.84	137.64	193.60	1,251.96	6.37	9.096	6.467	18.19	11.25
25.5	51.80	118.78	187.44	1,131.52	6.37	9.526	6.037	15.23	9.37
20.4	41.65	98.51	180.91	992.62	6.31	10.076	5.487	12.25	7.50
15.3	31.40	76.69	173.76	828.05	6.15	10.798	4.765	9.23	5.62
15 x 9 x 30.6	59.29	128.15	190.96	1,193.46	6.30	9.313	6.250	17.44	11.25
25.5	49.67	110.63	184.91	1,077.23	6.28	9.737	5.826	14.61	9.37
20.4	39.95	91.79	178.47	943.34	6.21	10.277	5.286	11.75	7.50
15.3	30.12	71.49	171.39	785.10	6.04	10.982	4.581	8.86	5.62
15 x 8 x 30.6	56.74	118.64	187.99	1,131.98	6.21	9.542	6.021	16.69	11.25
25.5	47.55	102.47	182.06	1,020.39	6.19	9.958	5.605	13.98	9.37
20.4	38.25	85.06	175.73	892.01	6.11	10.487	5.076	11.25	7.50
15.3	28.85	66.28	168.73	740.62	5.92	11.174	4.389	8.48	5.62



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	109.11	184.61	1,067.27	6.11	9.782	5.781	15.94	11.25
25.5	45.42	94.29	178.82	960.82	6.07	10.190	5.373	13.36	9.37
20.4	36.55	78.32	172.61	838.48	5.98	10.705	4.858	10.75	7.50
15.3	27.57	61.08	165.72	694.54	5.78	11.372	4.191	8.11	5.62
14 x 10 x 30.6	59.29	126.05	178.76	1,076.57	5.98	8.541	6.022	17.44	10.50
25.5	49.67	108.81	173.39	973.65	5.97	8.948	5.615	14.61	8.75
20.4	39.95	90.26	167.66	854.43	5.91	9.467	5.096	11.75	7.00
15.3	30.12	70.25	161.30	712.69	5.75	10.145	4.418	8.86	5.25
14 x 9 x 30.6	56.74	117.18	176.35	1,025.25	5.91	8.749	5.814	16.69	10.50
25.5	47.55	101.19	171.06	925.93	5.89	9.150	5.413	13.98	8.75
20.4	38.25	83.97	165.40	811.06	5.82	9.659	4.904	11.25	7.00
15.3	28.85	65.39	159.09	674.85	5.65	10.321	4.242	8.48	5.25
14 x 8 x 30.6	54.19	108.29	173.61	971.24	5.83	8.969	5.594	15.94	10.50
25.5	45.42	93.56	168.43	875.92	5.80	9.362	5.201	13.36	8.75
20.4	36.55	77.67	162.85	765.84	5.72	9.860	4.703	10.75	7.00
15.3	27.57	60.52	156.59	635.65	5.53	10.504	4.059	8.11	5.25
14 x 7 x 30.6	51.64	99.38	170.49	914.32	5.73	9.200	5.363	15.19	10.50
25.5	43.30	85.91	165.42	823.45	5.69	9.585	4.978	12.73	8.75
20.4	34.85	71.37	159.94	718.64	5.60	10.070	4.493	10.25	7.00
15.3	26.30	55.64	153.76	595.00	5.40	10.693	3.870	7.73	5.25
13 x 9 x 30.6	54.19	106.51	161.94	871.46	5.52	8.182	5.381	15.94	9.75
25.5	45.42	92.01	157.38	787.54	5.50	8.559	5.004	13.36	8.12
20.4	36.55	76.36	152.44	690.04	5.43	9.036	4.527	10.75	6.50
15.3	27.57	59.46	146.84	574.05	5.26	9.654	3.909	8.11	4.87
13 x 8 x 30.6	51.64	98.25	159.44	824.49	5.44	8.392	5.171	15.19	9.75
25.5	43.30	84.91	154.95	743.97	5.41	8.762	4.801	12.73	8.12
20.4	34.85	70.50	150.08	650.59	5.33	9.228	4.335	10.25	6.50
15.3	26.30	54.93	144.52	539.82	5.14	9.828	3.735	7.73	4.87
13 x 7 x 30.6	49.09	89.97	156.56	774.92	5.35	8.613	4.950	14.44	9.75
25.5	41.17	77.80	152.17	698.21	5.31	8.975	4.588	12.11	8.12
20.4	33.15	64.63	147.37	609.38	5.21	9.428	4.135	9.75	6.50
15.3	25.02	50.39	141.87	504.31	5.02	10.008	3.555	7.36	4.87
12 x 9 x 30.6	51.64	96.14	147.74	731.70	5.12	7.610	4.953	15.19	9.00
25.5	43.30	83.10	143.85	661.71	5.10	7.963	4.600	12.73	7.50
20.4	34.85	68.98	139.59	580.00	5.03	8.408	4.155	10.25	6.00
15.3	26.30	53.72	134.66	482.43	4.86	8.980	3.583	7.73	4.50
12 x 8 x 30.6	49.09	88.51	145.47	691.32	5.05	7.811	4.752	14.44	9.00
25.5	41.17	76.53	141.64	624.18	5.02	8.156	4.407	12.11	7.50
20.4	33.15	63.56	137.41	545.97	4.93	8.590	3.973	9.75	6.00
15.3	25.02	49.52	132.50	452.89	4.75	9.145	3.418	7.36	4.50
12 x 7 x 30.6	46.54	80.86	142.84	648.64	4.96	8.022	4.541	13.69	9.00
25.5	39.05	69.95	139.08	584.72	4.92	8.359	4.204	11.48	7.50
20.4	31.45	58.13	134.91	510.39	4.82	8.780	3.783	9.25	6.00
15.3	23.75	45.32	130.03	422.22	4.63	9.316	3.247	6.98	4.50
12 x 6 x 30.6	43.99	73.18	139.79	603.46	4.85	8.246	4.317	12.94	9.00
25.5	36.92	63.36	136.12	543.15	4.80	8.573	3.990	10.86	7.50
20.4	29.75	52.70	132.02	473.15	4.70	8.979	3.584	8.75	6.00
15.3	22.47	41.12	127.17	390.36	4.50	9.493	3.070	6.61	4.50

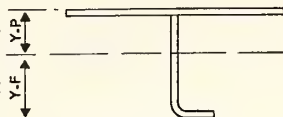


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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25.5 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 30.6	151.09	584.86	728.06	9,932.42	12.86	13.642	16.983	44.44	22.50
25.5	126.17	556.31	624.86	9,012.89	13.07	14.424	16.201	37.11	18.75
20.4	101.15	516.05	527.33	7,987.43	13.27	15.478	15.147	29.75	15.00
17.85	88.70	459.71	512.75	7,423.26	13.34	16.148	14.477	26.09	13.14
30 x 27 x 30.6	143.44	578.20	672.44	9,520.85	12.83	14.159	16.466	42.19	22.50
25.5	119.80	550.08	577.20	8,625.69	13.02	14.944	15.681	35.23	18.75
20.4	96.05	476.77	521.51	7,627.66	13.19	15.999	14.626	28.25	15.00
17.85	84.23	424.77	507.12	7,079.01	13.24	16.666	13.959	24.77	13.14
30 x 24 x 30.6	135.79	570.52	616.70	9,075.95	12.78	14.717	15.908	39.94	22.50
25.5	113.42	529.46	542.89	8,208.86	12.95	15.504	15.121	33.36	18.75
20.4	90.95	437.44	514.79	7,242.42	13.07	16.556	14.069	26.75	15.00
17.85	79.76	389.79	500.63	6,711.62	13.10	17.219	13.406	23.46	13.14
30 x 21 x 30.6	128.14	560.85	561.57	8,593.51	12.70	15.322	15.303	37.69	22.50
25.5	107.05	481.65	534.50	7,758.85	12.83	16.109	14.516	31.48	18.75
20.4	85.85	398.08	506.96	6,828.91	12.93	17.155	13.470	25.25	15.00
17.85	75.30	354.78	493.07	6,318.66	12.93	17.810	12.815	22.15	13.14
30 x 18 x 30.6	120.49	504.89	550.98	8,068.56	12.57	15.981	14.644	35.44	22.50
25.5	100.67	433.77	524.59	7,271.53	12.68	16.764	13.861	29.61	18.75
20.4	80.75	358.67	497.72	6,383.90	12.73	17.799	12.826	23.75	15.00
17.85	70.83	319.74	484.15	5,897.38	12.72	18.444	12.181	20.83	13.14
30 x 15 x 30.6	112.84	448.81	538.27	7,495.22	12.39	16.700	13.925	33.19	22.50
25.5	94.30	385.81	512.71	6,742.08	12.47	17.475	13.150	27.73	18.75
20.4	75.65	319.22	486.65	5,903.64	12.49	18.494	12.131	22.25	15.00
17.85	66.36	284.68	473.46	5,444.59	12.45	19.125	11.500	19.52	13.14
30 x 12 x 30.6	105.19	392.61	522.73	6,866.48	12.14	17.489	13.136	30.94	22.50
25.5	87.92	337.78	498.19	6,164.76	12.19	18.251	12.374	25.86	18.75
20.4	70.55	279.73	473.13	5,383.77	12.17	19.246	11.379	20.75	15.00
17.85	61.89	249.58	460.43	4,956.63	12.10	19.860	10.765	18.20	13.14
30 x 9 x 30.6	97.54	336.30	503.30	6,173.91	11.80	18.358	12.267	28.69	22.50
25.5	81.55	289.68	480.07	5,532.80	11.82	19.100	11.525	23.98	18.75
20.4	65.45	240.20	456.28	4,819.18	11.76	20.063	10.562	19.25	15.00
17.85	57.43	214.45	444.19	4,429.23	11.67	20.654	9.971	16.89	13.14
30 x 6 x 30.6	89.89	279.88	478.31	5,407.25	11.34	19.320	11.305	26.44	22.50
25.5	75.17	241.50	456.79	4,838.04	11.32	20.034	10.591	22.11	18.75
20.4	60.35	200.63	434.67	4,203.85	11.22	20.954	9.671	17.75	15.00
17.85	52.96	179.30	423.39	3,857.41	11.12	21.514	9.111	15.58	13.14
27 x 27 x 30.6	135.79	508.37	594.45	7,569.97	11.67	12.734	14.891	39.94	20.25
25.5	113.42	485.49	510.31	6,872.97	11.85	13.468	14.157	33.36	16.87
20.4	90.95	421.40	462.19	6,089.28	11.99	14.450	13.175	26.75	13.50
17.85	79.76	375.33	450.41	5,655.61	12.03	15.069	12.556	23.46	11.83
27 x 24 x 30.6	128.14	501.89	544.03	7,211.66	11.63	13.256	14.369	37.69	20.25
25.5	107.05	467.09	479.39	6,535.48	11.78	13.992	13.633	31.48	16.87
20.4	85.85	385.79	456.44	5,775.68	11.89	14.971	12.654	25.25	13.50
17.85	75.30	343.65	444.83	5,355.76	11.91	15.585	12.040	22.15	11.83
27 x 21 x 30.6	120.49	493.49	494.28	6,821.79	11.56	13.824	13.801	35.44	20.25
25.5	100.67	423.79	472.22	6,170.01	11.68	14.559	13.066	29.61	16.87
20.4	80.75	350.13	449.70	5,438.19	11.75	15.532	12.093	23.75	13.50
17.85	70.83	311.93	438.30	5,034.30	11.75	16.139	11.486	20.83	11.83
27 x 18 x 30.6	112.84	442.83	485.22	6,395.98	11.45	14.444	13.181	33.19	20.25
25.5	94.30	380.42	463.69	5,772.94	11.54	15.175	12.450	27.73	16.87
20.4	75.65	314.43	441.69	5,073.98	11.57	16.137	11.488	22.25	13.50
17.85	66.36	280.19	430.53	4,688.80	11.55	16.734	10.891	19.52	11.83



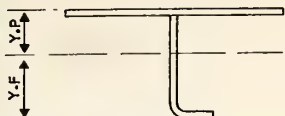
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

25.5 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 15 x 30.6	105.19	392.04	474.26	5,929.03	11.28	15.123	12.502	30.94	20.25
25.5	87.92	336.97	453.38	5,339.97	11.35	15.847	11.778	25.86	16.87
20.4	70.55	278.68	432.01	4,679.72	11.34	16.792	10.833	20.75	13.50
17.85	61.89	248.42	421.15	4,316.46	11.30	17.376	10.249	18.20	11.83
27 x 12 x 30.6	97.54	341.14	460.71	5,414.66	11.05	15.872	11.753	28.69	20.25
25.5	81.55	293.45	440.65	4,866.03	11.08	16.582	11.043	23.98	16.87
20.4	65.45	242.89	420.07	4,251.56	11.04	17.504	10.121	19.25	13.50
17.85	57.43	216.61	409.59	3,914.03	10.97	18.069	9.556	16.89	11.83
27 x 9 x 30.6	89.89	290.12	443.55	4,845.28	10.73	16.701	10.924	26.44	20.25
25.5	75.17	249.85	424.55	4,344.98	10.73	17.391	10.234	22.11	16.87
20.4	60.35	207.06	405.00	3,784.91	10.65	18.279	9.346	17.75	13.50
17.85	52.96	184.78	395.01	3,477.70	10.56	18.821	8.804	15.58	11.83
27 x 6 x 30.6	82.24	238.97	421.11	4,211.56	10.29	17.624	10.001	24.19	20.25
25.5	68.80	206.16	403.53	3,769.45	10.25	18.284	9.341	20.23	16.87
20.4	55.25	171.18	385.35	3,274.34	10.14	19.128	8.497	16.25	13.50
17.85	48.49	152.91	376.02	3,003.00	10.02	19.639	7.986	14.26	11.83
24 x 24 x 30.6	120.49	435.59	473.54	5,587.10	10.46	11.799	12.826	35.44	18.00
25.5	100.67	406.62	417.75	5,074.07	10.59	12.479	12.146	29.61	15.00
20.4	80.75	335.75	399.48	4,492.23	10.68	13.380	11.245	23.75	12.00
17.85	70.83	298.98	390.19	4,168.42	10.69	13.942	10.683	20.83	10.51
24 x 22 x 30.6	115.39	431.49	443.45	5,385.36	10.42	12.144	12.481	33.94	18.00
25.5	96.42	380.81	413.86	4,883.75	10.54	12.824	11.801	28.36	15.00
20.4	77.35	314.49	395.79	4,315.33	10.60	13.722	10.903	22.75	12.00
17.85	67.85	280.07	386.60	3,999.38	10.60	14.280	10.345	19.96	10.51
24 x 20 x 30.6	110.29	413.30	426.88	5,171.04	10.37	12.512	12.113	32.44	18.00
25.5	92.17	354.98	409.49	4,682.30	10.47	13.190	11.435	27.11	15.00
20.4	73.95	293.20	391.64	4,128.96	10.51	14.082	10.543	21.75	12.00
17.85	64.87	261.14	382.56	3,821.80	10.49	14.635	9.990	19.08	10.51
24 x 18 x 30.6	105.19	383.09	421.66	4,942.90	10.30	12.903	11.722	30.94	18.00
25.5	87.92	329.10	404.54	4,468.71	10.38	13.579	11.046	25.86	15.00
20.4	70.55	271.90	386.95	3,932.35	10.40	14.463	10.162	20.75	12.00
17.85	61.89	242.20	377.98	3,635.02	10.37	15.008	9.617	18.20	10.51
24 x 16 x 30.6	100.09	352.83	415.69	4,699.59	10.21	13.320	11.305	29.44	18.00
25.5	83.67	303.19	398.88	4,241.85	10.27	13.991	10.634	24.61	15.00
20.4	67.15	250.57	381.60	3,724.62	10.26	14.864	9.761	19.75	12.00
17.85	58.92	223.25	372.77	3,438.32	10.21	15.401	9.224	17.33	10.51
24 x 14 x 30.6	94.99	322.51	408.81	4,439.52	10.10	13.765	10.860	27.94	18.00
25.5	79.42	277.25	392.36	4,000.45	10.13	14.429	10.196	23.36	15.00
20.4	63.75	229.23	375.43	3,504.81	10.10	15.290	9.335	18.75	12.00
17.85	55.94	204.28	366.77	3,230.87	10.04	15.816	8.809	16.45	10.51
24 x 12 x 30.6	89.89	292.14	400.77	4,160.91	9.95	14.243	10.382	26.44	18.00
25.5	75.17	251.26	384.77	3,743.05	9.96	14.897	9.728	22.11	15.00
20.4	60.35	207.86	368.25	3,271.82	9.90	15.740	8.885	17.75	12.00
17.85	52.96	185.30	359.78	3,011.77	9.83	16.254	8.371	15.58	10.51
24 x 10 x 30.6	84.79	261.71	391.28	3,861.69	9.76	14.756	9.869	24.94	18.00
25.5	70.92	225.25	375.80	3,468.02	9.75	15.397	9.228	20.86	15.00
20.4	56.95	186.48	359.78	3,024.45	9.67	16.219	8.406	16.75	12.00
17.85	49.98	166.30	351.55	2,780.02	9.57	16.717	7.908	14.70	10.51
24 x 8 x 30.6	79.69	231.22	379.89	3,539.50	9.52	15.308	9.317	23.44	18.00
25.5	66.67	199.19	365.05	3,173.48	9.49	15.932	8.693	19.61	15.00
20.4	53.55	165.07	349.65	2,761.30	9.38	16.728	7.897	15.75	12.00
17.85	47.00	147.29	341.70	2,534.48	9.28	17.208	7.417	13.82	10.51



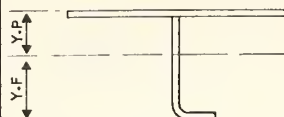
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

25.5 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 6 x 30.6	74.59	200.67	365.98	3,191.59	9.22	15.904	8.721	21.94	18.00
25.5	62.42	173.10	351.94	2,857.27	9.17	16.506	8.119	18.36	15.00
20.4	50.15	143.65	337.30	2,480.83	9.04	17.270	7.355	14.75	12.00
17.85	44.02	128.26	329.72	2,273.88	8.92	17.729	6.896	12.95	10.51
21 x 20 x 30.6	102.64	352.27	364.56	3,874.25	9.20	10.998	10.627	30.19	15.75
25.5	85.80	302.61	351.20	3,515.11	9.28	11.616	10.009	25.23	13.12
20.4	68.85	249.88	337.40	3,104.47	9.30	12.424	9.201	20.25	10.50
17.85	60.40	222.49	330.32	2,874.91	9.28	12.922	8.703	17.77	9.20
21 x 18 x 30.6	97.54	325.71	360.28	3,699.18	9.14	11.357	10.268	28.69	15.75
25.5	81.55	279.83	347.10	3,350.31	9.20	11.973	9.652	23.98	13.12
20.4	65.45	231.12	333.48	2,952.00	9.20	12.773	8.852	19.25	10.50
17.85	57.43	205.80	326.48	2,729.74	9.16	13.264	8.361	16.89	9.20
21 x 16 x 30.6	92.44	299.08	355.35	3,511.85	9.06	11.742	9.883	27.19	15.75
25.5	77.30	257.01	342.40	3,174.78	9.10	12.353	9.272	22.73	13.12
20.4	62.05	212.33	328.97	2,790.52	9.08	13.143	8.482	18.25	10.50
17.85	54.45	189.10	322.07	2,576.53	9.02	13.625	8.000	16.01	9.20
21 x 14 x 30.6	87.34	272.39	349.62	3,310.92	8.95	12.155	9.470	25.69	15.75
25.5	73.05	234.15	336.93	2,987.43	8.97	12.758	8.867	21.48	13.12
20.4	58.65	193.52	323.75	2,619.23	8.93	13.535	8.090	17.25	10.50
17.85	51.47	172.39	316.95	2,414.60	8.86	14.007	7.618	15.14	9.20
21 x 12 x 30.6	82.24	245.65	342.88	3,094.86	8.82	12.599	9.026	24.19	15.75
25.5	68.80	211.26	330.50	2,787.01	8.82	13.192	8.433	20.23	13.12
20.4	55.25	174.69	317.61	2,437.19	8.74	13.951	7.674	16.25	10.50
17.85	48.49	155.66	310.94	2,243.18	8.66	14.411	7.214	14.26	9.20
21 x 10 x 30.6	77.14	218.84	334.82	2,861.88	8.64	13.077	8.548	22.69	15.75
25.5	64.55	188.33	322.82	2,572.12	8.62	13.657	7.968	18.98	13.12
20.4	51.85	155.84	310.30	2,243.36	8.52	14.395	7.230	15.25	10.50
17.85	45.51	138.91	303.79	2,061.40	8.43	14.839	6.786	13.39	9.20
21 x 8 x 30.6	72.04	191.98	325.02	2,609.92	8.42	13.595	8.030	21.19	15.75
25.5	60.30	165.36	313.51	2,341.13	8.38	14.157	7.468	17.73	13.12
20.4	48.45	136.97	301.43	2,036.55	8.26	14.869	6.756	14.25	10.50
17.85	42.53	122.15	295.13	1,868.31	8.15	15.295	6.330	12.51	9.20
21 x 6 x 30.6	66.94	165.05	312.86	2,336.56	8.13	14.157	7.468	19.69	15.75
25.5	56.05	142.36	301.96	2,092.16	8.07	14.696	6.929	16.48	13.12
20.4	45.05	118.08	290.47	1,815.42	7.93	15.375	6.250	13.25	10.50
17.85	39.56	105.38	284.44	1,662.80	7.81	15.779	5.846	11.63	9.20
18 x 18 x 30.6	89.89	270.68	301.07	2,654.66	7.94	9.808	8.817	26.44	13.50
25.5	75.17	232.62	291.37	2,409.18	7.99	10.357	8.268	22.11	11.25
20.4	60.35	192.10	281.23	2,125.84	7.98	11.066	7.559	17.75	9.00
15.3	45.42	148.89	270.36	1,788.25	7.85	12.011	6.614	13.36	6.75
18 x 16 x 30.6	84.79	247.75	297.12	2,516.20	7.88	10.156	8.469	24.94	13.50
25.5	70.92	212.95	287.56	2,278.72	7.90	10.701	7.924	20.86	11.25
20.4	56.95	175.89	277.54	2,005.22	7.87	11.400	7.225	16.75	9.00
15.3	42.87	136.36	266.75	1,680.61	7.72	12.325	6.300	12.61	6.75
18 x 14 x 30.6	79.69	224.75	292.49	2,367.10	7.78	10.532	8.093	23.44	13.50
25.5	66.67	193.24	283.10	2,139.00	7.79	11.069	7.556	19.61	11.25
20.4	53.55	159.66	273.22	1,876.91	7.73	11.756	6.869	15.75	9.00
15.3	40.32	123.82	262.54	1,567.10	7.55	12.656	5.969	11.86	6.75
18 x 12 x 30.6	74.59	201.70	286.98	2,206.11	7.66	10.938	7.687	21.94	13.50
25.5	62.42	173.49	277.79	1,989.00	7.65	11.465	7.160	18.36	11.25
20.4	50.15	143.41	268.10	1,740.15	7.57	12.134	6.491	14.75	9.00
15.3	37.77	111.28	257.55	1,447.23	7.36	13.006	5.619	11.11	6.75



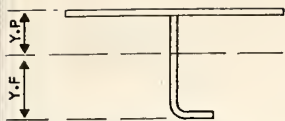
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

25.5 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 10 x 30.6	69.49	178.58	280.31	2,031.73	7.51	11.377	7.248	20.44	13.50
25.5	58.17	153.69	271.38	1,827.55	7.47	11.891	6.734	17.11	11.25
20.4	46.75	127.13	261.92	1,594.09	7.37	12.539	6.086	13.75	9.00
15.3	35.22	98.72	251.55	1,320.43	7.13	13.376	5.249	10.36	6.75
18 x 8 x 30.6	64.39	155.40	272.09	1,842.21	7.30	11.854	6.771	18.94	13.50
25.5	53.92	133.86	263.49	1,653.29	7.25	12.351	6.274	15.86	11.25
20.4	43.35	110.83	254.33	1,437.73	7.12	12.972	5.653	12.75	9.00
15.3	32.67	86.15	244.19	1,186.10	6.86	13.768	4.857	9.61	6.75
18 x 6 x 30.6	59.29	132.16	261.69	1,635.51	7.03	12.375	6.250	17.44	13.50
25.5	49.67	113.99	253.53	1,464.62	6.96	12.848	5.777	14.61	11.25
20.4	39.95	94.51	244.77	1,269.94	6.81	13.437	5.188	11.75	9.00
15.3	30.12	73.57	234.96	1,043.53	6.53	14.184	4.441	8.86	6.75
16 x 12 x 30.6	69.49	173.84	250.79	1,706.94	6.88	9.819	6.806	20.44	12.00
25.5	58.17	149.56	243.49	1,540.33	6.86	10.299	6.326	17.11	10.00
20.4	46.75	123.63	235.68	1,348.13	6.77	10.905	5.720	13.75	8.00
15.3	35.22	95.89	227.00	1,120.73	6.57	11.688	4.937	10.36	6.00
16 x 10 x 30.6	64.39	153.22	245.03	1,567.28	6.73	10.229	6.396	18.94	12.00
25.5	53.92	131.90	237.91	1,410.68	6.69	10.695	5.930	15.86	10.00
20.4	43.35	109.09	230.25	1,230.58	6.59	11.280	5.345	12.75	8.00
15.3	32.67	84.67	221.66	1,018.58	6.35	12.030	4.595	9.61	6.00
16 x 8 x 30.6	59.29	132.54	237.84	1,414.96	6.54	10.676	5.949	17.44	12.00
25.5	49.67	114.19	230.95	1,270.32	6.48	11.125	5.500	14.61	10.00
20.4	39.95	94.53	223.50	1,104.45	6.35	11.683	4.942	11.75	8.00
15.3	30.12	73.45	215.04	910.17	6.10	12.392	4.233	8.86	6.00
15 x 12 x 30.6	66.94	160.35	233.02	1,484.19	6.48	9.256	6.369	19.69	11.25
25.5	56.05	137.99	226.58	1,339.99	6.46	9.711	5.914	16.48	9.37
20.4	45.05	114.06	219.64	1,173.05	6.37	10.284	5.341	13.25	7.50
15.3	33.95	88.46	211.82	975.00	6.17	11.022	4.603	9.98	5.62
15 x 11 x 30.6	64.39	150.68	230.50	1,423.72	6.42	9.448	6.177	18.94	11.25
25.5	53.92	129.69	224.13	1,283.67	6.39	9.898	5.727	15.86	9.37
20.4	43.35	107.24	217.24	1,121.81	6.29	10.461	5.164	12.75	7.50
15.3	32.67	83.19	209.44	930.33	6.07	11.183	4.442	9.61	5.62
15 x 10 x 30.6	61.84	141.00	227.70	1,360.57	6.34	9.650	5.975	18.19	11.25
25.5	51.80	121.39	221.40	1,225.06	6.30	10.092	5.533	15.23	9.37
20.4	41.65	100.41	214.57	1,068.73	6.19	10.644	4.981	12.25	7.50
15.3	31.40	77.92	206.80	884.30	5.96	11.349	4.276	9.23	5.62
15 x 9 x 30.6	59.29	131.29	224.56	1,294.55	6.26	9.860	5.765	17.44	11.25
25.5	49.67	113.08	218.35	1,164.03	6.20	10.294	5.331	14.61	9.37
20.4	39.95	93.57	211.59	1,013.72	6.09	10.834	4.791	11.75	7.50
15.3	30.12	72.65	203.85	836.87	5.85	11.520	4.105	8.86	5.62
15 x 8 x 30.6	56.74	121.57	221.02	1,225.47	6.16	10.080	5.545	16.69	11.25
25.5	47.55	104.76	214.91	1,100.43	6.10	10.505	5.120	13.98	9.37
20.4	38.25	86.72	208.24	956.65	5.97	11.031	4.594	11.25	7.50
15.3	28.85	67.37	200.55	787.95	5.72	11.696	3.929	8.48	5.62



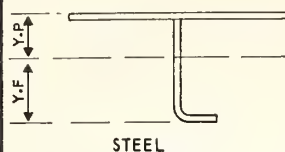
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	725.32	944.07	12,587.64	12.71	13.333	17.355	59.00	30.00
35.7	175.90	697.57	846.92	11,738.59	12.89	13.860	16.828	51.73	26.25
30.6	151.09	669.48	745.27	10,822.80	13.07	14.522	16.166	44.44	22.50
25.5	126.17	638.60	640.97	9,816.78	13.24	15.372	15.316	37.11	18.75
20.4	101.15	526.27	611.90	8,682.66	13.35	16.498	14.190	29.75	15.00
17.85	88.70	468.22	597.20	8,054.13	13.38	17.202	13.486	26.09	13.14
30 x 27 x 40.8	190.40	716.92	871.91	12,073.52	12.69	13.847	16.841	56.00	30.00
35.7	166.97	689.60	782.25	11,247.23	12.86	14.378	16.310	49.11	26.25
30.6	143.44	661.92	688.42	10,355.81	13.02	15.043	15.645	42.19	22.50
25.5	119.80	589.97	633.81	9,376.75	13.16	15.894	14.794	35.23	18.75
20.4	96.05	486.28	605.13	8,274.02	13.24	17.015	13.673	28.25	15.00
17.85	84.23	432.68	590.62	7,663.75	13.24	17.712	12.976	24.77	13.14
30 x 24 x 40.8	180.20	707.22	799.55	11,516.54	12.65	14.404	16.284	53.00	30.00
35.7	158.05	680.39	717.42	10,716.44	12.80	14.938	15.750	46.48	26.25
30.6	135.79	631.47	653.19	9,853.12	12.94	15.603	15.085	39.94	22.50
25.5	113.42	541.27	625.56	8,905.16	13.05	16.452	14.236	33.36	18.75
20.4	90.95	446.25	597.33	7,838.55	13.10	17.565	13.123	26.75	15.00
17.85	79.76	397.12	583.03	7,249.17	13.08	18.254	12.434	23.46	13.14
30 x 21 x 40.8	170.00	695.90	726.97	10,911.10	12.58	15.009	15.679	50.00	30.00
35.7	149.12	652.44	669.64	10,141.29	12.71	15.544	15.144	43.86	26.25
30.6	128.14	574.42	643.02	9,310.50	12.82	16.209	14.479	37.69	22.50
25.5	107.05	492.50	615.94	8,398.50	12.91	17.053	13.635	31.48	18.75
20.4	85.85	406.18	588.25	7,373.51	12.92	18.153	12.535	25.25	15.00
17.85	75.30	361.53	574.20	6,808.06	12.87	18.831	11.857	22.15	13.14
30 x 18 x 40.8	159.80	654.19	682.51	10,250.59	12.47	15.669	15.019	47.00	30.00
35.7	140.20	587.31	656.94	9,515.97	12.58	16.203	14.485	41.23	26.25
30.6	120.49	517.26	630.99	8,722.97	12.67	16.864	13.824	35.44	22.50
25.5	100.67	443.67	604.58	7,852.71	12.72	17.699	12.989	29.61	18.75
20.4	80.75	366.07	577.53	6,875.79	12.69	18.783	11.905	23.75	15.00
17.85	70.83	325.91	563.78	6,337.81	12.62	19.446	11.242	20.83	13.14
30 x 15 x 40.8	149.60	581.20	666.43	9,527.12	12.30	16.392	14.296	44.00	30.00
35.7	131.27	522.02	641.70	8,833.62	12.39	16.922	13.766	38.61	26.25
30.6	112.84	460.00	616.57	8,084.73	12.45	17.576	13.112	33.19	22.50
25.5	94.30	394.78	590.97	7,263.06	12.48	18.398	12.290	27.73	18.75
20.4	75.65	325.93	564.70	6,341.81	12.41	19.458	11.230	22.25	15.00
17.85	66.36	290.27	551.31	5,835.41	12.32	20.103	10.585	19.52	13.14
30 x 12 x 40.8	139.40	507.99	646.75	8,731.25	12.07	17.188	13.500	41.00	30.00
35.7	122.35	456.58	623.05	8,086.04	12.13	17.710	12.978	35.98	26.25
30.6	105.19	402.63	598.95	7,388.90	12.17	18.352	12.336	30.94	22.50
25.5	87.92	345.82	574.35	6,624.06	12.16	19.155	11.533	25.86	18.75
20.4	70.55	285.75	549.05	5,767.46	12.06	20.184	10.504	20.75	15.00
17.85	61.89	254.60	536.13	5,297.46	11.94	20.807	9.881	18.20	13.14
30 x 9 x 40.8	129.20	434.58	622.11	7,851.53	11.74	18.067	12.621	38.00	30.00
35.7	113.42	390.99	599.74	7,263.43	11.79	18.577	12.111	33.36	26.25
30.6	97.54	345.15	576.94	6,627.32	11.80	19.201	11.487	28.69	22.50
25.5	81.55	296.79	553.62	5,929.22	11.75	19.978	10.710	23.98	18.75
20.4	65.45	245.53	529.56	5,147.99	11.61	20.967	9.721	19.25	15.00
17.85	57.43	218.90	517.22	4,720.05	11.48	21.562	9.126	16.89	13.14
30 x 6 x 40.8	119.00	360.95	590.36	6,873.97	11.29	19.044	11.644	35.00	30.00
35.7	104.50	325.24	569.74	6,353.87	11.31	19.536	11.152	30.73	26.25
30.6	89.89	287.57	548.67	5,790.22	11.30	20.135	10.553	26.44	22.50
25.5	75.17	247.69	527.03	5,170.90	11.22	20.877	9.811	22.11	18.75
20.4	60.35	205.28	504.60	4,477.87	11.05	21.814	8.874	17.75	15.00
17.85	52.96	183.18	493.04	4,098.67	10.90	22.375	8.313	15.58	13.14
27 x 27 x 40.8	180.20	628.71	769.90	9,582.52	11.54	12.446	15.242	53.00	27.00
35.7	158.05	606.58	691.01	8,943.86	11.69	12.943	14.745	46.48	23.62
30.6	135.79	584.11	608.25	8,250.15	11.84	13.564	14.124	39.94	20.25



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	521.23	561.23	7,482.60	11.96	14.356	13.332	33.36	16.87
20.4	90.95	429.46	537.80	6,611.40	12.03	15.395	12.293	26.75	13.50
17.85	79.76	382.00	525.88	6,126.54	12.02	16.038	11.650	23.46	11.83
27 x 24 x 40.8	170.00	620.55	704.55	9,135.48	11.51	12.966	14.722	50.00	27.00
35.7	149.12	598.79	632.41	8,516.00	11.65	13.466	14.222	43.86	23.62
30.6	128.14	556.73	576.69	7,843.13	11.77	14.088	13.600	37.69	20.25
25.5	107.05	477.16	554.17	7,099.02	11.87	14.878	12.810	31.48	16.87
20.4	85.85	393.22	531.07	6,255.66	11.90	15.909	11.779	25.25	13.50
17.85	75.30	349.81	519.31	5,787.19	11.87	16.544	11.144	22.15	11.83
27 x 21 x 40.8	159.80	610.96	638.98	8,647.78	11.45	13.534	14.154	47.00	27.00
35.7	140.20	573.65	589.65	8,050.82	11.57	14.034	13.654	41.23	23.62
30.6	120.49	505.10	567.99	7,402.42	11.67	14.655	13.033	35.44	20.25
25.5	100.67	433.01	545.89	6,685.82	11.74	15.440	12.248	29.61	16.87
20.4	80.75	356.94	523.19	5,874.90	11.73	16.459	11.229	23.75	13.50
17.85	70.83	317.58	511.61	5,425.40	11.68	17.083	10.605	20.83	11.83
27 x 18 x 40.8	149.60	573.20	599.54	8,113.60	11.35	14.155	13.533	44.00	27.00
35.7	131.27	514.73	578.77	7,543.21	11.45	14.655	13.033	38.61	23.62
30.6	112.84	453.36	557.63	6,923.67	11.53	15.272	12.416	33.19	20.25
25.5	94.30	388.79	536.04	6,239.42	11.56	16.048	11.640	27.73	16.87
20.4	75.65	320.62	513.83	5,466.42	11.52	17.049	10.639	22.25	13.50
17.85	66.36	285.33	502.47	5,038.89	11.45	17.660	10.028	19.52	11.83
27 x 15 x 40.8	139.40	507.19	585.70	7,525.98	11.21	14.839	12.849	41.00	27.00
35.7	122.35	455.65	565.59	6,987.09	11.28	15.334	12.354	35.98	23.62
30.6	105.19	401.52	545.10	6,401.74	11.33	15.944	11.744	30.94	20.25
25.5	87.92	344.51	524.14	5,755.64	11.34	16.707	10.981	25.86	16.87
20.4	70.55	284.26	502.53	5,027.05	11.26	17.684	10.004	20.75	13.50
17.85	61.89	253.05	491.45	4,625.04	11.16	18.277	9.411	18.20	11.83
27 x 12 x 40.8	129.20	440.97	568.59	6,876.45	10.99	15.594	12.094	38.00	27.00
35.7	113.42	396.41	549.30	6,375.16	11.04	16.082	11.606	33.36	23.62
30.6	97.54	349.56	529.63	5,830.48	11.07	16.679	11.009	28.69	20.25
25.5	81.55	300.15	509.47	5,229.61	11.04	17.423	10.265	23.98	16.87
20.4	65.45	247.87	488.61	4,553.17	10.92	18.369	9.319	19.25	13.50
17.85	57.43	220.75	477.88	4,180.82	10.80	18.939	8.749	16.89	11.83
27 x 9 x 40.8	119.00	374.52	546.87	6,154.68	10.68	16.434	11.254	35.00	27.00
35.7	104.50	337.01	528.67	5,698.55	10.71	16.909	10.779	30.73	23.62
30.6	89.89	297.49	510.06	5,202.59	10.71	17.488	10.200	26.44	20.25
25.5	75.17	255.73	490.93	4,655.51	10.65	18.205	9.483	22.11	16.87
20.4	60.35	211.43	471.05	4,040.53	10.50	19.110	8.578	17.75	13.50
17.85	52.96	188.42	460.78	3,702.77	10.36	19.652	8.036	15.58	11.83
27 x 6 x 40.8	108.80	307.84	518.42	5,347.92	10.25	17.372	10.316	32.00	27.00
35.7	95.57	277.45	501.68	4,946.45	10.25	17.828	9.860	28.11	23.62
30.6	82.24	245.32	484.49	4,509.17	10.23	18.381	9.307	24.19	20.25
25.5	68.80	211.23	466.75	4,026.45	10.14	19.061	8.627	20.23	16.87
20.4	55.25	174.96	448.21	3,484.19	9.95	19.914	7.774	16.25	13.50
17.85	48.49	156.06	438.57	3,186.88	9.80	20.421	7.267	14.26	11.83
24 x 24 x 40.8	159.80	537.05	612.41	7,064.01	10.35	11.535	13.153	47.00	24.00
35.7	140.20	519.90	549.97	6,598.01	10.47	11.997	12.691	41.23	21.00
30.6	120.49	484.28	502.42	6,087.88	10.58	12.571	12.117	35.44	18.00
25.5	100.67	415.05	484.54	5,519.15	10.66	13.297	11.391	29.61	15.00
20.4	80.75	341.92	466.09	4,869.26	10.68	14.241	10.447	23.75	12.00
17.85	70.83	304.07	456.63	4,506.18	10.65	14.820	9.868	20.83	10.51
24 x 22 x 40.8	153.00	531.91	573.46	6,812.70	10.32	11.880	12.808	45.00	24.00
35.7	134.25	514.96	515.02	6,357.06	10.43	12.343	12.345	39.48	21.00
30.6	115.39	453.54	497.69	5,858.37	10.53	12.917	11.771	33.94	18.00
25.5	96.42	388.75	480.01	5,302.78	10.59	13.641	11.047	28.36	15.00
20.4	77.35	320.29	461.74	4,668.80	10.58	14.577	10.111	22.75	12.00
17.85	67.85	284.86	452.36	4,315.21	10.53	15.149	9.539	19.96	10.51

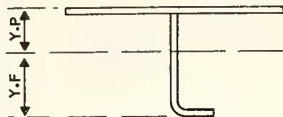


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	526.11	534.41	6,545.17	10.28	12.247	12.441	43.00	24.00
35.7	128.30	480.00	509.41	6,101.23	10.38	12.711	11.977	37.73	21.00
30.6	110.29	422.75	492.37	5,615.47	10.46	13.283	11.405	32.44	18.00
25.5	92.17	362.41	474.91	5,074.66	10.50	14.003	10.685	27.11	15.00
20.4	73.95	298.65	456.85	4,458.48	10.47	14.929	9.759	21.75	12.00
17.85	64.87	265.64	447.56	4,115.44	10.41	15.493	9.195	19.08	10.51
24 x 18 x 40.8	139.40	495.26	519.55	6,259.79	10.22	12.639	12.049	41.00	24.00
35.7	122.35	444.90	503.12	5,829.10	10.30	13.102	11.586	35.98	21.00
30.6	105.19	391.91	486.35	5,357.95	10.37	13.671	11.017	30.94	18.00
25.5	87.92	336.04	469.15	4,833.81	10.39	14.385	10.303	25.86	15.00
20.4	70.55	276.99	451.32	4,237.56	10.33	15.299	9.389	20.75	12.00
17.85	61.89	246.40	442.13	3,906.25	10.26	15.853	8.835	18.20	10.51
24 x 16 x 40.8	132.60	456.00	512.04	5,954.71	10.14	13.059	11.629	39.00	24.00
35.7	116.40	409.73	495.93	5,539.06	10.21	13.519	11.169	34.23	21.00
30.6	100.09	361.02	479.47	5,084.46	10.25	14.084	10.604	29.44	18.00
25.5	83.67	309.64	462.56	4,579.14	10.26	14.789	9.899	24.61	15.00
20.4	67.15	255.31	445.01	4,005.22	10.18	15.688	9.000	19.75	12.00
17.85	58.92	227.16	435.95	3,686.95	10.08	16.231	8.457	17.33	10.51
24 x 14 x 40.8	125.80	416.64	503.36	5,627.84	10.03	13.508	11.180	37.00	24.00
35.7	110.45	374.48	487.63	5,229.29	10.08	13.964	10.724	32.48	21.00
30.6	94.99	330.07	471.54	4,793.48	10.11	14.522	10.166	27.94	18.00
25.5	79.42	283.21	454.98	4,309.41	10.09	15.216	9.472	23.36	15.00
20.4	63.75	233.61	437.75	3,760.55	9.99	16.097	8.591	18.75	12.00
17.85	55.94	207.90	428.83	3,456.79	9.88	16.627	8.061	16.45	10.51
24 x 12 x 40.8	119.00	377.18	493.24	5,276.73	9.89	13.990	10.698	35.00	24.00
35.7	104.50	339.16	477.96	4,897.69	9.93	14.441	10.247	30.73	21.00
30.6	89.89	299.08	462.30	4,483.26	9.94	14.990	9.698	26.44	18.00
25.5	75.17	256.74	446.15	4,023.25	9.90	15.670	9.018	22.11	15.00
20.4	60.35	211.90	429.31	3,502.54	9.77	16.529	8.159	17.75	12.00
17.85	52.96	188.63	420.56	3,214.95	9.65	17.044	7.644	15.58	10.51
24 x 10 x 40.8	112.20	337.61	481.27	4,898.58	9.71	14.509	10.179	33.00	24.00
35.7	98.55	303.76	466.52	4,541.88	9.74	14.952	9.736	28.98	21.00
30.6	84.79	268.03	451.38	4,151.83	9.73	15.490	9.198	24.94	18.00
25.5	70.92	230.25	435.74	3,719.12	9.67	16.153	8.535	20.86	15.00
20.4	56.95	190.16	419.36	3,230.07	9.51	16.986	7.702	16.75	12.00
17.85	49.98	169.35	410.83	2,960.51	9.38	17.482	7.206	14.70	10.51
24 x 8 x 40.8	105.40	297.94	466.88	4,490.17	9.48	15.071	9.617	31.00	24.00
35.7	92.60	268.29	452.79	4,159.11	9.49	15.502	9.186	27.23	21.00
30.6	79.69	236.94	438.29	3,796.93	9.47	16.025	8.663	23.44	18.00
25.5	66.67	203.72	423.27	3,395.26	9.39	16.667	8.021	19.61	15.00
20.4	53.55	168.41	407.48	2,941.89	9.21	17.468	7.220	15.75	12.00
17.85	47.00	150.05	399.21	2,692.46	9.07	17.944	6.744	13.82	10.51
24 x 6 x 40.8	98.60	258.17	449.27	4,047.68	9.19	15.679	9.009	29.00	24.00
35.7	86.65	232.74	436.01	3,746.18	9.18	16.096	8.592	25.48	21.00
30.6	74.59	205.79	422.32	3,415.99	9.14	16.599	8.089	21.94	18.00
25.5	62.42	177.16	408.08	3,049.70	9.04	17.215	7.473	18.36	15.00
20.4	50.15	146.65	393.02	2,636.60	8.85	17.979	6.709	14.75	12.00
17.85	44.02	130.74	385.09	2,409.68	8.69	18.431	6.257	12.95	10.51
21 x 20 x 40.8	136.00	447.89	454.74	4,893.80	9.11	10.762	10.926	40.00	21.00
35.7	119.37	408.67	435.17	4,570.77	9.20	11.185	10.503	35.11	18.37
30.6	102.64	360.05	422.12	4,214.21	9.26	11.705	9.983	30.19	15.75
25.5	85.80	308.66	408.67	3,813.78	9.29	12.356	9.332	25.23	13.12
20.4	68.85	254.27	394.62	3,353.72	9.25	13.189	8.499	20.25	10.50
17.85	60.40	226.09	387.32	3,096.18	9.19	13.694	7.994	17.77	9.20
21 x 18 x 40.8	129.20	420.39	442.53	4,675.63	9.06	11.122	10.566	38.00	21.00
35.7	113.42	377.83	429.99	4,361.77	9.13	11.544	10.144	33.36	18.37
30.6	97.54	332.92	417.13	4,015.54	9.18	12.062	9.626	28.69	15.75



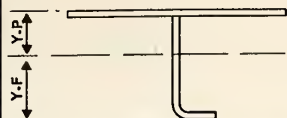
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	285.45	403.85	3,627.16	9.19	12.707	8.981	23.98	13.12
20.4	65.45	235.20	389.95	3,181.89	9.13	13.528	8.160	19.25	10.50
17.85	57.43	209.16	382.71	2,933.21	9.05	14.024	7.664	16.89	9.20
21 x 16 x 40.8	122.40	385.92	436.35	4,441.59	8.99	11.509	10.179	36.00	21.00
35.7	107.47	346.92	424.04	4,138.30	9.05	11.929	9.759	31.61	18.37
30.6	92.44	305.74	411.40	3,803.94	9.08	12.442	9.246	27.19	15.75
25.5	77.30	262.21	398.32	3,429.34	9.07	13.078	8.610	22.73	13.12
20.4	62.05	216.11	384.59	3,000.81	8.98	13.885	7.803	18.25	10.50
17.85	54.45	192.21	377.42	2,762.07	8.89	14.370	7.318	16.01	9.20
21 x 14 x 40.8	115.60	351.35	429.15	4,189.87	8.90	11.925	9.763	34.00	21.00
35.7	101.52	315.93	417.12	3,898.82	8.94	12.341	9.347	29.86	18.37
30.6	87.34	278.51	404.73	3,578.12	8.95	12.847	8.841	25.69	15.75
25.5	73.05	238.94	391.89	3,219.29	8.92	13.473	8.215	21.48	13.12
20.4	58.65	197.00	378.38	2,809.73	8.81	14.262	7.426	17.25	10.50
17.85	51.47	175.26	371.29	2,582.14	8.71	14.734	6.954	15.14	9.20
21 x 12 x 40.8	108.80	316.67	420.68	3,918.39	8.77	12.374	9.314	32.00	21.00
35.7	95.57	284.86	408.96	3,641.52	8.80	12.784	8.904	28.11	18.37
30.6	82.24	251.23	396.89	3,336.60	8.80	13.281	8.407	24.19	15.75
25.5	68.80	215.63	384.34	2,995.83	8.75	13.893	7.795	20.23	13.12
20.4	55.25	177.88	371.09	2,607.78	8.61	14.661	7.027	16.25	10.50
17.85	48.49	158.28	364.11	2,392.70	8.49	15.117	6.571	14.26	9.20
21 x 10 x 40.8	102.00	281.89	410.54	3,624.74	8.61	12.859	8.829	30.00	21.00
35.7	89.62	253.71	399.22	3,364.35	8.62	13.261	8.427	26.36	18.37
30.6	77.14	223.89	387.53	3,077.67	8.60	13.746	7.942	22.69	15.75
25.5	64.55	192.29	375.34	2,757.64	8.53	14.341	7.347	18.98	13.12
20.4	51.85	158.73	362.41	2,394.02	8.37	15.082	6.606	15.25	10.50
17.85	45.51	141.30	355.57	2,193.00	8.24	15.520	6.168	13.39	9.20
21 x 8 x 40.8	95.20	246.99	398.20	3,306.07	8.39	13.386	8.302	28.00	21.00
35.7	83.67	222.48	387.38	3,064.91	8.39	13.776	7.912	24.61	18.37
30.6	72.04	196.50	376.17	2,799.39	8.35	14.246	7.442	21.19	15.75
25.5	60.30	168.92	364.44	2,503.22	8.26	14.819	6.869	17.73	13.12
20.4	48.45	139.57	351.91	2,167.38	8.08	15.529	6.159	14.25	10.50
17.85	42.53	124.30	345.25	1,982.17	7.94	15.947	5.741	12.51	9.20
21 x 6 x 40.8	88.40	211.98	382.85	2,959.05	8.12	13.959	7.729	26.00	21.00
35.7	77.72	191.17	372.68	2,740.40	8.10	14.335	7.353	22.86	18.37
30.6	66.94	169.06	362.09	2,499.49	8.04	14.785	6.903	19.69	15.75
25.5	56.05	145.51	350.94	2,230.84	7.94	15.331	6.357	16.48	13.12
20.4	45.05	120.39	338.95	1,926.65	7.74	16.004	5.684	13.25	10.50
17.85	39.56	107.29	332.53	1,759.26	7.59	16.397	5.291	11.63	9.20
18 x 18 x 40.8	119.00	348.60	368.48	3,347.63	7.88	9.603	9.085	35.00	18.00
35.7	104.50	313.56	359.37	3,129.36	7.94	9.980	8.708	30.73	15.75
30.6	89.89	276.43	349.95	2,886.15	7.98	10.441	8.247	26.44	13.50
25.5	75.17	237.07	340.12	2,610.66	7.98	11.012	7.676	22.11	11.25
20.4	60.35	195.30	329.68	2,291.99	7.90	11.736	6.952	17.75	9.00
15.3	45.42	150.94	318.15	1,913.15	7.70	12.675	6.013	13.36	6.75
18 x 16 x 40.8	112.20	319.01	363.55	3,175.35	7.82	9.954	8.734	33.00	18.00
35.7	98.55	286.98	354.58	2,964.07	7.87	10.329	8.359	28.98	15.75
30.6	84.79	253.03	345.30	2,728.90	7.89	10.785	7.903	24.94	13.50
25.5	70.92	217.03	335.58	2,463.02	7.87	11.348	7.340	20.86	11.25
20.4	56.95	178.84	325.23	2,156.35	7.77	12.058	6.630	16.75	9.00
15.3	42.87	138.26	313.73	1,793.41	7.54	12.972	5.716	12.61	6.75
18 x 14 x 40.8	105.40	289.31	357.75	2,989.28	7.74	10.332	8.356	31.00	18.00
35.7	92.60	260.31	348.96	2,786.26	7.77	10.704	7.984	27.23	15.75
30.6	79.69	229.57	339.84	2,560.53	7.77	11.153	7.535	23.44	13.50
25.5	66.67	196.97	330.27	2,305.80	7.73	11.706	6.982	19.61	11.25
20.4	53.55	162.35	320.02	2,012.89	7.62	12.398	6.290	15.75	9.00
15.3	40.32	125.56	308.58	1,667.84	7.36	13.283	5.405	11.86	6.75

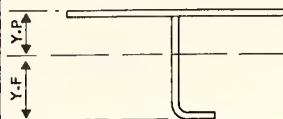


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		r	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	259.50	350.86	2,787.70	7.63	10.743	7.945	29.00	18.00
35.7	86.65	233.56	342.28	2,594.44	7.64	11.108	7.580	25.48	15.75
30.6	74.59	206.06	333.36	2,379.80	7.63	11.549	7.139	21.94	13.50
25.5	62.42	176.87	323.96	2,138.04	7.57	12.088	6.600	18.36	11.25
20.4	50.15	145.85	313.85	1,860.91	7.43	12.759	5.929	14.75	9.00
15.3	37.77	112.86	302.48	1,536.00	7.15	13.610	5.078	11.11	6.75
18 x 10 x 40.8	91.80	229.57	342.50	2,568.57	7.48	11.189	7.499	27.00	18.00
35.7	80.70	206.73	334.19	2,386.90	7.48	11.546	7.142	23.73	15.75
30.6	69.49	182.49	325.52	2,185.30	7.45	11.975	6.713	20.44	13.50
25.5	58.17	156.73	316.36	1,958.65	7.37	12.497	6.191	17.11	11.25
20.4	46.75	129.33	306.44	1,699.63	7.21	13.142	5.546	13.75	9.00
15.3	35.22	100.15	295.17	1,397.41	6.91	13.954	4.734	10.36	6.75
18 x 8 x 40.8	85.00	199.53	332.18	2,329.51	7.28	11.675	7.013	25.00	18.00
35.7	74.75	179.82	324.22	2,161.62	7.27	12.021	6.667	21.98	15.75
30.6	64.39	158.87	315.88	1,975.40	7.22	12.434	6.254	18.94	13.50
25.5	53.92	136.56	307.01	1,766.37	7.13	12.935	5.753	15.86	11.25
20.4	43.35	112.79	297.34	1,528.17	6.95	13.548	5.140	12.75	9.00
15.3	32.67	87.43	286.22	1,251.54	6.62	14.315	4.373	9.61	6.75
18 x 6 x 40.8	78.20	169.37	319.09	2,067.66	7.02	12.208	6.480	23.00	18.00
35.7	68.80	152.83	311.60	1,916.21	6.99	12.538	6.150	20.23	15.75
30.6	59.29	135.19	303.70	1,748.20	6.93	12.932	5.756	17.44	13.50
25.5	49.67	116.36	295.24	1,559.77	6.82	13.405	5.283	14.61	11.25
20.4	39.95	96.23	285.91	1,345.54	6.62	13.982	4.706	11.75	9.00
15.3	30.12	74.70	275.04	1,097.79	6.28	14.697	3.991	8.86	6.75



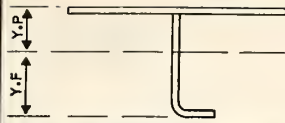
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	816.04	965.30	13,597.90	12.92	14.087	16.663	59.00	30.00
35.7	175.90	788.39	865.07	12,683.68	13.07	14.662	16.088	51.73	26.25
30.6	151.09	760.26	760.34	11,689.60	13.21	15.376	15.374	44.44	22.50
25.5	126.17	650.40	731.78	10,588.63	13.33	16.280	14.470	37.11	18.75
20.4	101.15	534.92	702.51	9,338.25	13.37	17.457	13.293	29.75	15.00
17.85	88.70	475.36	687.60	8,642.46	13.34	18.181	12.569	26.09	13.14
30 x 27 x 40.8	190.40	806.65	891.61	13,022.69	12.88	14.606	16.144	56.00	30.00
35.7	166.97	779.42	799.09	12,132.91	13.02	15.183	15.567	49.11	26.25
30.6	143.44	702.35	751.77	11,165.58	13.14	15.898	14.852	42.19	22.50
25.5	119.80	600.93	723.59	10,094.97	13.22	16.799	13.951	35.23	18.75
20.4	96.05	494.33	694.68	8,880.96	13.23	17.966	12.784	28.25	15.00
17.85	84.23	439.32	679.94	8,206.71	13.18	18.680	12.070	24.77	13.14
30 x 24 x 40.8	180.20	795.82	817.72	12,401.80	12.82	15.166	15.584	53.00	30.00
35.7	158.05	732.97	769.07	11,540.24	12.93	15.744	15.006	46.48	26.25
30.6	135.79	644.34	741.88	10,603.80	13.03	16.457	14.293	39.94	22.50
25.5	113.42	551.41	714.16	9,568.18	13.09	17.352	13.398	33.36	18.75
20.4	90.95	453.70	685.67	8,395.81	13.06	18.505	12.245	26.75	15.00
17.85	79.76	403.27	671.13	7,746.05	12.98	19.208	11.542	23.46	13.14
30 x 21 x 40.8	170.00	743.63	783.18	11,729.53	12.72	15.773	14.977	50.00	30.00
35.7	149.12	666.71	756.99	10,900.70	12.82	16.350	14.400	43.86	26.25
30.6	128.14	586.23	730.36	10,000.03	12.89	17.058	13.692	37.69	22.50
25.5	107.05	501.83	703.17	9,004.80	12.92	17.944	12.806	31.48	18.75
20.4	85.85	413.03	675.19	7,880.19	12.85	19.079	11.671	25.25	15.00
17.85	75.30	367.19	660.86	7,258.27	12.75	19.767	10.983	22.15	13.14
30 x 18 x 40.8	159.80	669.36	768.24	10,999.26	12.58	16.433	14.317	47.00	30.00
35.7	140.20	600.31	742.73	10,208.48	12.66	17.005	13.745	41.23	26.25
30.6	120.49	528.03	716.76	9,349.37	12.70	17.706	13.044	35.44	22.50
25.5	100.67	452.18	690.21	8,400.89	12.70	18.578	12.172	29.61	18.75
20.4	80.75	372.34	662.82	7,331.12	12.59	19.690	11.060	23.75	15.00
17.85	70.83	331.09	648.77	6,740.92	12.47	20.360	10.390	20.83	13.14
30 x 15 x 40.8	149.60	594.89	750.30	10,203.11	12.39	17.151	13.599	44.00	30.00
35.7	131.27	533.77	725.61	9,456.82	12.44	17.717	13.033	38.61	26.25
30.6	112.84	469.74	700.45	8,646.14	12.46	18.406	12.344	33.19	22.50
25.5	94.30	402.48	674.68	7,751.89	12.42	19.260	11.490	27.73	18.75
20.4	75.65	331.61	648.03	6,745.25	12.28	20.341	10.409	22.25	15.00
17.85	66.36	294.96	634.32	6,191.20	12.14	20.990	9.760	19.52	13.14
30 x 12 x 40.8	139.40	520.22	728.36	9,331.77	12.12	17.938	12.812	41.00	30.00
35.7	122.35	467.09	704.69	8,637.69	12.15	18.493	12.257	35.98	26.25
30.6	105.19	411.35	680.54	7,883.70	12.15	19.165	11.585	30.94	22.50
25.5	87.92	352.72	655.74	7,052.57	12.08	19.995	10.755	25.86	18.75
20.4	70.55	290.84	630.01	6,118.74	11.89	21.038	9.712	20.75	15.00
17.85	61.89	258.82	616.73	5,606.00	11.74	21.660	9.090	18.20	13.14
30 x 9 x 40.8	129.20	445.36	700.91	8,374.03	11.76	18.803	11.947	38.00	30.00
35.7	113.42	400.27	678.56	7,741.59	11.77	19.341	11.409	33.36	26.25
30.6	97.54	352.86	655.68	7,054.24	11.74	19.991	10.759	28.69	22.50
25.5	81.55	302.90	632.14	6,296.85	11.64	20.789	9.961	23.98	18.75
20.4	65.45	250.05	607.60	5,447.21	11.42	21.785	8.965	19.25	15.00
17.85	57.43	222.64	594.86	4,981.75	11.25	22.375	8.375	16.89	13.14
30 x 6 x 40.8	119.00	370.31	665.59	7,316.38	11.28	19.758	10.992	35.00	30.00
35.7	104.50	333.30	644.96	6,757.14	11.27	20.273	10.477	30.73	26.25
30.6	89.89	294.28	623.79	6,148.52	11.21	20.893	9.857	26.44	22.50
25.5	75.17	253.01	601.90	5,477.60	11.08	21.649	9.101	22.11	18.75
20.4	60.35	209.22	578.93	4,725.63	10.84	22.587	8.163	17.75	15.00
17.85	52.96	186.45	566.94	4,314.42	10.64	23.140	7.610	15.58	13.14
27 x 27 x 40.8	180.20	709.86	787.03	10,357.08	11.71	13.160	14.590	53.00	27.00
35.7	158.05	687.80	705.56	9,664.91	11.84	13.698	14.052	46.48	23.62
30.6	135.79	620.19	665.35	8,907.43	11.94	14.362	13.388	39.94	20.25



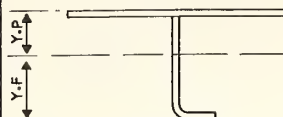
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	530.57	642.38	8,063.35	12.01	15.198	12.552	33.36	16.87
20.4	90.95	436.25	618.68	7,099.75	12.01	16.274	11.476	26.75	13.50
17.85	79.76	387.58	606.53	6,562.08	11.95	16.931	10.819	23.46	11.83
27 x 24 x 40.8	170.00	700.69	720.29	9,856.13	11.66	13.684	14.066	50.00	27.00
35.7	149.12	645.79	678.99	9,184.89	11.76	14.223	13.527	43.86	23.62
30.6	128.14	567.72	656.88	8,450.67	11.85	14.885	12.865	37.69	20.25
25.5	107.05	485.75	634.25	7,633.42	11.89	15.715	12.035	31.48	16.87
20.4	85.85	399.48	610.86	6,702.44	11.85	16.778	10.972	25.25	13.50
17.85	75.30	354.95	598.83	6,184.28	11.77	17.423	10.327	22.15	11.83
27 x 21 x 40.8	159.80	653.35	689.91	9,311.95	11.58	14.253	13.497	47.00	27.00
35.7	140.20	585.87	668.65	8,665.34	11.66	14.790	12.960	41.23	23.62
30.6	120.49	515.15	646.96	7,958.44	11.72	15.449	12.301	35.44	20.25
25.5	100.67	440.88	624.73	7,172.56	11.73	16.269	11.481	29.61	16.87
20.4	80.75	362.68	601.69	6,279.37	11.65	17.314	10.436	23.75	13.50
17.85	70.83	322.30	589.82	5,783.56	11.55	17.944	9.806	20.83	11.83
27 x 18 x 40.8	149.60	586.20	677.08	8,718.69	11.45	14.873	12.877	44.00	27.00
35.7	131.27	525.81	656.34	8,101.17	11.51	15.407	12.343	38.61	23.62
30.6	112.84	462.48	635.16	7,426.44	11.55	16.058	11.692	33.19	20.25
25.5	94.30	395.94	613.41	6,677.29	11.53	16.864	10.886	27.73	16.87
20.4	75.65	325.84	590.82	5,827.93	11.41	17.886	9.864	22.25	13.50
17.85	66.36	289.63	579.14	5,357.78	11.29	18.499	9.251	19.52	11.83
27 x 15 x 40.8	139.40	518.86	661.54	8,069.40	11.27	15.552	12.198	41.00	27.00
35.7	122.35	465.60	641.45	7,486.37	11.31	16.079	11.671	35.98	23.62
30.6	105.19	409.71	620.89	6,849.64	11.32	16.718	11.032	30.94	20.25
25.5	87.92	350.94	599.74	6,143.63	11.27	17.506	10.244	25.86	16.87
20.4	70.55	288.97	577.70	5,345.19	11.12	18.497	9.253	20.75	13.50
17.85	61.89	256.93	566.27	4,904.51	10.98	19.089	8.661	18.20	11.83
27 x 12 x 40.8	129.20	451.31	642.34	7,355.74	11.03	16.299	11.451	38.00	27.00
35.7	113.42	405.25	623.06	6,813.81	11.04	16.814	10.936	33.36	23.62
30.6	97.54	356.85	603.30	6,222.16	11.03	17.436	10.314	28.69	20.25
25.5	81.55	305.88	582.91	5,566.92	10.94	18.200	9.550	23.98	16.87
20.4	65.45	252.06	561.57	4,827.76	10.75	19.153	8.597	19.25	13.50
17.85	57.43	224.21	550.45	4,421.01	10.59	19.718	8.032	16.89	11.83
27 x 9 x 40.8	119.00	383.56	618.00	6,567.64	10.69	17.123	10.627	35.00	27.00
35.7	104.50	344.75	599.79	6,074.93	10.68	17.621	10.129	30.73	23.62
30.6	89.89	303.88	581.06	5,536.98	10.64	18.221	9.529	26.44	20.25
25.5	75.17	260.76	561.66	4,941.73	10.53	18.952	8.798	22.11	16.87
20.4	60.35	215.12	541.25	4,271.76	10.30	19.858	7.892	17.75	13.50
17.85	52.96	191.46	530.54	3,904.13	10.13	20.391	7.359	15.58	11.83
27 x 6 x 40.8	108.80	315.60	586.15	5,692.81	10.22	18.038	9.712	32.00	27.00
35.7	95.57	284.10	569.37	5,259.42	10.19	18.513	9.237	28.11	23.62
30.6	82.24	250.81	552.05	4,785.76	10.12	19.081	8.669	24.19	20.25
25.5	68.80	215.57	534.00	4,261.69	9.99	19.769	7.981	20.23	16.87
20.4	55.25	178.14	514.86	3,672.73	9.74	20.617	7.133	16.25	13.50
17.85	48.49	158.69	504.74	3,350.30	9.55	21.112	6.638	14.26	11.83
24 x 24 x 40.8	159.80	608.61	625.84	7,636.67	10.48	12.202	12.548	47.00	24.00
35.7	140.20	561.30	591.50	7,128.08	10.58	12.699	12.051	41.23	21.00
30.6	120.49	493.52	574.00	6,567.71	10.65	13.308	11.442	35.44	18.00
25.5	100.67	422.22	555.98	5,939.41	10.68	14.067	10.683	29.61	15.00
20.4	80.75	347.09	537.20	5,218.68	10.62	15.035	9.715	23.75	12.00
17.85	70.83	308.30	527.46	4,815.70	10.54	15.620	9.130	20.83	10.51
24 x 22 x 40.8	153.00	586.06	602.78	7,354.49	10.44	12.549	12.201	45.00	24.00
35.7	134.25	525.66	585.87	6,857.43	10.52	13.045	11.705	39.48	21.00
30.6	115.39	462.22	568.56	6,310.08	10.57	13.652	11.098	33.94	18.00
25.5	96.42	395.48	550.72	5,697.06	10.58	14.405	10.345	28.36	15.00

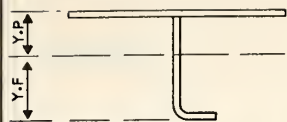


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 22 x 20.4	77.35	325.16	532.10	4,995.22	10.51	15.362	9.388	22.75	12.00
17.85	67.85	288.85	522.42	4,603.61	10.41	15.938	8.812	19.96	10.51
24 x 20 x 40.8	146.20	546.19	596.22	7,055.10	10.38	12.917	11.833	43.00	24.00
35.7	128.30	489.95	579.54	6,571.06	10.44	13.412	11.338	37.73	21.00
30.6	110.29	430.88	562.45	6,038.38	10.48	14.014	10.736	32.44	18.00
25.5	92.17	368.72	544.82	5,442.51	10.47	14.760	9.990	27.11	15.00
20.4	73.95	303.22	526.37	4,761.66	10.37	15.704	9.046	21.75	12.00
17.85	64.87	269.38	516.76	4,382.60	10.27	16.269	8.481	19.08	10.51
24 x 18 x 40.8	139.40	506.22	588.79	6,736.86	10.30	13.308	11.442	41.00	24.00
35.7	122.35	454.18	572.37	6,267.56	10.35	13.800	10.950	35.98	21.00
30.6	105.19	399.49	555.54	5,751.44	10.37	14.397	10.353	30.94	18.00
25.5	87.92	341.94	538.13	5,174.80	10.34	15.134	9.616	25.86	15.00
20.4	70.55	281.26	519.89	4,517.29	10.22	16.061	8.689	20.75	12.00
17.85	61.89	249.91	510.36	4,152.07	10.10	16.614	8.136	18.20	10.51
24 x 16 x 40.8	132.60	466.17	580.29	6,397.93	10.20	13.725	11.025	39.00	24.00
35.7	116.40	418.33	564.18	5,945.34	10.24	14.212	10.538	34.23	21.00
30.6	100.09	368.05	547.64	5,447.93	10.24	14.802	9.948	29.44	18.00
25.5	83.67	315.12	530.51	4,892.88	10.19	15.527	9.223	24.61	15.00
20.4	67.15	259.28	512.51	4,261.37	10.04	16.435	8.315	19.75	12.00
17.85	58.92	230.42	503.08	3,911.39	9.91	16.975	7.775	17.33	10.51
24 x 14 x 40.8	125.80	426.01	570.48	6,036.23	10.07	14.169	10.581	37.00	24.00
35.7	110.45	382.42	554.74	5,602.62	10.09	14.650	10.100	32.48	21.00
30.6	94.99	336.57	538.54	5,126.36	10.08	15.231	9.519	27.94	18.00
25.5	79.42	288.27	521.74	4,595.60	10.01	15.942	8.808	23.36	15.00
20.4	63.75	237.29	504.02	3,993.03	9.84	16.828	7.922	18.75	12.00
17.85	55.94	210.92	494.71	3,659.90	9.69	17.352	7.398	16.45	10.51
24 x 12 x 40.8	119.00	385.77	559.04	5,649.37	9.91	14.645	10.105	35.00	24.00
35.7	104.50	346.44	543.73	5,237.37	9.92	15.118	9.632	30.73	21.00
30.6	89.89	305.05	527.95	4,785.09	9.89	15.686	9.064	26.44	18.00
25.5	75.17	261.40	511.53	4,281.66	9.80	16.380	8.370	22.11	15.00
20.4	60.35	215.28	494.16	3,711.37	9.60	17.240	7.510	17.75	12.00
17.85	52.96	191.41	484.99	3,396.83	9.45	17.746	7.004	15.58	10.51
24 x 10 x 40.8	112.20	345.42	545.52	5,234.65	9.71	15.154	9.596	33.00	24.00
35.7	98.55	310.39	530.73	4,847.30	9.70	15.617	9.133	28.98	21.00
30.6	84.79	273.47	515.45	4,422.24	9.66	16.171	8.579	24.94	18.00
25.5	70.92	234.50	499.51	3,949.62	9.54	16.843	7.907	20.86	15.00
20.4	56.95	193.26	482.56	3,415.35	9.33	17.672	7.078	16.75	12.00
17.85	49.98	171.89	473.57	3,121.38	9.16	18.159	6.591	14.70	10.51
24 x 8 x 40.8	105.40	304.99	529.29	4,788.93	9.46	15.702	9.048	31.00	24.00
35.7	92.60	274.28	515.14	4,429.79	9.44	16.151	8.599	27.23	21.00
30.6	79.69	241.86	500.48	4,035.70	9.37	16.686	8.064	23.44	18.00
25.5	66.67	207.57	485.13	3,597.87	9.24	17.334	7.416	19.61	15.00
20.4	53.55	171.22	468.71	3,103.85	9.01	18.128	6.622	15.75	12.00
17.85	47.00	152.36	459.95	2,832.64	8.83	18.591	6.159	13.82	10.51
24 x 6 x 40.8	98.60	264.45	509.44	4,308.61	9.15	16.292	8.458	29.00	24.00
35.7	86.65	238.09	496.11	3,981.83	9.11	16.724	8.026	25.48	21.00
30.6	74.59	210.19	482.24	3,623.07	9.03	17.237	7.513	21.94	18.00
25.5	62.42	180.61	467.63	3,224.60	8.88	17.854	6.896	18.36	15.00
20.4	50.15	149.16	451.90	2,775.63	8.63	18.608	6.142	14.75	12.00
17.85	44.02	132.82	443.44	2,529.62	8.45	19.045	5.705	12.95	10.51
21 x 20 x 40.8	136.00	464.52	509.48	5,284.79	9.20	11.377	10.373	40.00	21.00
35.7	119.37	416.87	496.75	4,929.84	9.25	11.826	9.924	35.11	18.37
30.6	102.64	366.69	483.63	4,536.15	9.28	12.371	9.379	30.19	15.75
25.5	85.80	313.78	469.97	4,092.41	9.26	13.042	8.708	25.23	13.12
20.4	68.85	257.95	455.50	3,581.92	9.15	13.886	7.864	20.25	10.50
17.85	60.40	229.09	447.86	3,296.52	9.05	14.389	7.361	17.77	9.20



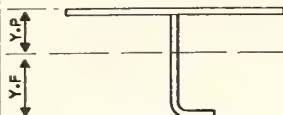
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	429.44	503.34	5,040.19	9.13	11.737	10.013	38.00	21.00
35.7	113.42	385.44	490.80	4,695.66	9.17	12.183	9.567	33.36	18.37
30.6	97.54	339.09	477.85	4,313.91	9.18	12.722	9.028	28.69	15.75
25.5	81.55	290.21	464.34	3,884.36	9.14	13.385	8.365	23.98	13.12
20.4	65.45	238.62	449.98	3,391.50	9.01	14.213	7.537	19.25	10.50
17.85	57.43	211.96	442.37	3,116.69	8.90	14.704	7.046	16.89	9.20
21 x 16 x 40.8	122.40	394.27	496.29	4,778.87	9.04	12.121	9.629	36.00	21.00
35.7	107.47	353.94	483.95	4,446.33	9.06	12.562	9.188	31.61	18.37
30.6	92.44	311.44	471.20	4,078.26	9.06	13.095	8.655	27.19	15.75
25.5	77.30	266.61	457.86	3,664.82	9.00	13.746	8.004	22.73	13.12
20.4	62.05	219.28	443.64	3,191.73	8.85	14.556	7.194	18.25	10.50
17.85	54.45	194.81	436.07	2,928.69	8.72	15.034	6.716	16.01	9.20
21 x 14 x 40.8	115.60	359.00	488.08	4,499.06	8.92	12.532	9.218	34.00	21.00
35.7	101.52	322.36	476.00	4,180.34	8.94	12.968	8.782	29.86	18.37
30.6	87.34	283.74	463.48	3,827.94	8.91	13.491	8.259	25.69	15.75
25.5	73.05	242.99	450.36	3,432.80	8.83	14.128	7.622	21.48	13.12
20.4	58.65	199.92	436.30	2,981.91	8.66	14.915	6.835	17.25	10.50
17.85	51.47	177.64	428.79	2,731.93	8.52	15.379	6.371	15.14	9.20
21 x 12 x 40.8	108.80	323.64	478.41	4,198.72	8.78	12.974	8.776	32.00	21.00
35.7	95.57	290.72	466.64	3,895.97	8.77	13.401	8.349	28.11	18.37
30.6	82.24	256.00	454.41	3,561.54	8.73	13.912	7.838	24.19	15.75
25.5	68.80	219.33	441.54	3,187.21	8.64	14.532	7.218	20.23	13.12
20.4	55.25	180.55	427.70	2,761.26	8.44	15.294	6.456	16.25	10.50
17.85	48.49	160.47	420.27	2,525.80	8.29	15.740	6.010	14.26	9.20
21 x 10 x 40.8	102.00	288.17	466.86	3,875.52	8.59	13.449	8.301	30.00	21.00
35.7	89.62	259.01	455.47	3,591.23	8.57	13.865	7.885	26.36	18.37
30.6	77.14	228.21	443.60	3,277.45	8.52	14.362	7.388	22.69	15.75
25.5	64.55	195.64	431.06	2,926.82	8.40	14.960	6.790	18.98	13.12
20.4	51.85	161.16	417.48	2,528.93	8.18	15.692	6.058	15.25	10.50
17.85	45.51	143.29	410.15	2,309.61	8.02	16.119	5.631	13.39	9.20
21 x 8 x 40.8	95.20	252.60	452.82	3,526.73	8.36	13.962	7.788	28.00	21.00
35.7	83.67	227.22	441.91	3,263.86	8.32	14.364	7.386	24.61	18.37
30.6	72.04	200.37	430.49	2,973.87	8.25	14.842	6.908	21.19	15.75
25.5	60.30	171.92	418.36	2,650.26	8.12	15.415	6.335	17.73	13.12
20.4	48.45	141.75	405.15	2,283.95	7.88	16.113	5.637	14.25	10.50
17.85	42.53	126.09	397.95	2,082.59	7.71	16.517	5.233	12.51	9.20
21 x 6 x 40.8	88.40	216.93	435.38	3,149.18	8.06	14.517	7.233	26.00	21.00
35.7	77.72	195.37	425.09	2,911.24	8.01	14.901	6.849	22.86	18.37
30.6	66.94	172.48	414.26	2,648.70	7.92	15.356	6.394	19.69	15.75
25.5	56.05	148.18	402.69	2,355.96	7.77	15.899	5.851	16.48	13.12
20.4	45.05	122.33	389.95	2,025.26	7.53	16.556	5.194	13.25	10.50
17.85	39.56	108.88	382.95	1,843.93	7.35	16.935	4.815	11.63	9.20
18 x 18 x 40.8	119.00	355.90	420.73	3,615.08	7.93	10.158	8.592	35.00	18.00
35.7	104.50	319.64	411.59	3,373.44	7.96	10.554	8.196	30.73	15.75
30.6	89.89	281.32	402.05	3,103.30	7.96	11.031	7.719	26.44	13.50
25.5	75.17	240.81	391.96	2,796.84	7.92	11.614	7.136	22.11	11.25
20.4	60.35	197.97	381.01	2,442.71	7.79	12.339	6.411	17.75	9.00
15.3	45.42	152.65	368.53	2,023.86	7.51	13.258	5.492	13.36	6.75
18 x 16 x 40.8	112.20	325.70	415.03	3,421.65	7.85	10.506	8.244	33.00	18.00
35.7	98.55	292.55	406.01	3,188.14	7.87	10.898	7.852	28.98	15.75
30.6	84.79	257.52	396.59	2,927.51	7.86	11.368	7.382	24.94	13.50
25.5	70.92	220.48	386.58	2,632.53	7.79	11.940	6.810	20.86	11.25
20.4	56.95	181.30	375.68	2,292.82	7.64	12.647	6.103	16.75	9.00
15.3	42.87	139.83	363.16	1,892.98	7.34	13.537	5.213	12.61	6.75
18 x 14 x 40.8	105.40	295.39	408.34	3,213.78	7.75	10.880	7.870	31.00	18.00
35.7	92.60	265.39	399.48	2,989.82	7.75	11.266	7.484	27.23	15.75



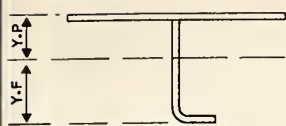
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 30.6	79.69	233.67	390.19	2,740.25	7.72	11.727	7.023	23.44	13.50
25.5	66.67	200.11	380.30	2,458.47	7.64	12.285	6.465	19.61	11.25
20.4	53.55	164.61	369.46	2,135.10	7.47	12.971	5.779	15.75	9.00
15.3	40.32	127.01	356.91	1,756.38	7.15	13.829	4.921	11.86	6.75
18 x 12 x 40.8	98.60	264.99	400.38	2,989.77	7.62	11.283	7.467	29.00	18.00
35.7	86.65	238.15	391.72	2,777.03	7.61	11.661	7.089	25.48	15.75
30.6	74.59	209.77	382.60	2,540.35	7.56	12.110	6.640	21.94	13.50
25.5	62.42	179.72	372.85	2,273.76	7.46	12.652	6.098	18.36	11.25
20.4	50.15	147.90	362.10	1,968.91	7.27	13.312	5.437	14.75	9.00
15.3	37.77	114.18	349.53	1,613.69	6.93	14.133	4.617	11.11	6.75
18 x 10 x 40.8	91.80	234.47	390.76	2,747.67	7.45	11.718	7.032	27.00	18.00
35.7	80.70	210.84	382.34	2,548.15	7.42	12.085	6.665	23.73	15.75
30.6	69.49	185.82	373.45	2,326.48	7.36	12.520	6.230	20.44	13.50
25.5	58.17	159.30	363.89	2,077.39	7.24	13.041	5.709	17.11	11.25
20.4	46.75	131.18	353.26	1,793.56	7.03	13.673	5.077	13.75	9.00
15.3	35.22	101.34	340.71	1,464.49	6.68	14.452	4.298	10.36	6.75
18 x 8 x 40.8	85.00	203.86	378.89	2,485.20	7.23	12.191	6.559	25.00	18.00
35.7	74.75	183.46	370.79	2,301.26	7.19	12.544	6.206	21.98	15.75
30.6	64.39	161.82	362.20	2,097.14	7.11	12.960	5.790	18.94	13.50
25.5	53.92	138.84	352.89	1,868.23	6.98	13.456	5.294	15.86	11.25
20.4	43.35	114.44	342.45	1,608.25	6.75	14.054	4.696	12.75	9.00
15.3	32.67	88.49	329.95	1,308.32	6.38	14.785	3.965	9.61	6.75
18 x 6 x 40.8	78.20	173.14	363.86	2,199.67	6.95	12.705	6.045	23.00	18.00
35.7	68.80	156.00	356.21	2,034.17	6.90	13.039	5.711	20.23	15.75
30.6	59.29	137.77	348.03	1,850.57	6.81	13.433	5.317	17.44	13.50
25.5	49.67	118.36	339.07	1,644.98	6.66	13.899	4.851	14.61	11.25
20.4	39.95	97.68	328.91	1,412.13	6.42	14.457	4.293	11.75	9.00
15.3	30.12	75.64	316.55	1,144.68	6.04	15.134	3.616	8.86	6.75



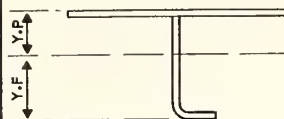
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,002.00	1,021.26	15,615.58	13.20	15.584	15.291	59.00	30.00
35.7	175.90	896.01	993.65	14,546.82	13.29	16.235	14.640	51.73	26.25
30.6	151.09	785.43	965.44	13,371.67	13.35	17.025	13.850	44.44	22.50
25.5	126.17	669.89	936.43	12,057.43	13.34	17.999	12.876	37.11	18.75
20.4	101.15	548.97	906.20	10,555.23	13.22	19.227	11.648	29.75	15.00
17.85	88.70	486.85	890.49	9,718.34	13.09	19.962	10.913	26.09	13.14
30 x 27 x 40.8	190.40	925.63	1,009.54	14,909.07	13.12	16.107	14.768	56.00	30.00
35.7	166.97	827.80	982.31	13,869.98	13.19	16.755	14.120	49.11	26.25
30.6	143.44	725.72	954.46	12,728.56	13.22	17.539	13.336	42.19	22.50
25.5	119.80	619.06	925.78	11,454.14	13.19	18.503	12.372	35.23	18.75
20.4	96.05	507.40	895.82	10,001.23	13.03	19.711	11.164	28.25	15.00
17.85	84.23	450.03	880.22	9,194.01	12.88	20.430	10.445	24.77	13.14
30 x 24 x 40.8	180.20	849.11	996.03	14,151.88	13.01	16.667	14.208	53.00	30.00
35.7	158.05	759.47	969.24	13,147.06	13.06	17.311	13.564	46.48	26.25
30.6	135.79	665.94	941.82	12,044.45	13.07	18.086	12.789	39.94	22.50
25.5	113.42	568.17	913.52	10,815.50	13.00	19.036	11.839	33.36	18.75
20.4	90.95	465.80	883.88	9,418.27	12.81	20.219	10.656	26.75	15.00
17.85	79.76	413.19	868.41	8,644.21	12.64	20.921	9.954	23.46	13.14
30 x 21 x 40.8	170.00	772.42	980.28	13,338.36	12.86	17.268	13.607	50.00	30.00
35.7	149.12	691.03	954.02	12,373.20	12.89	17.905	12.970	43.86	26.25
30.6	128.14	606.07	927.09	11,315.28	12.87	18.670	12.205	37.69	22.50
25.5	107.05	517.24	899.25	10,138.31	12.78	19.601	11.274	31.48	18.75
20.4	85.85	424.18	870.01	8,804.02	12.55	20.756	10.119	25.25	15.00
17.85	75.30	376.32	854.68	8,067.03	12.36	21.436	9.439	22.15	13.14
30 x 18 x 40.8	159.80	695.56	961.68	12,461.97	12.67	17.916	12.959	47.00	30.00
35.7	140.20	622.47	936.04	11,542.81	12.67	18.544	12.331	41.23	26.25
30.6	120.49	546.13	909.72	10,536.44	12.63	19.293	11.582	35.44	22.50
25.5	100.67	466.26	882.44	9,418.95	12.50	20.201	10.674	29.61	18.75
20.4	80.75	382.52	853.68	8,155.87	12.25	21.321	9.554	23.75	15.00
17.85	70.83	339.44	838.54	7,460.37	12.04	21.978	8.897	20.83	13.14
30 x 15 x 40.8	149.60	618.54	939.37	11,515.15	12.42	18.617	12.258	44.00	30.00
35.7	131.27	553.79	914.51	10,649.47	12.40	19.230	11.645	38.61	26.25
30.6	112.84	486.11	888.93	9,702.70	12.33	19.960	10.915	33.19	22.50
25.5	94.30	415.22	862.35	8,653.38	12.18	20.840	10.035	27.73	18.75
20.4	75.65	340.84	834.19	7,470.95	11.89	21.919	8.956	22.25	15.00
17.85	66.36	302.55	819.29	6,821.92	11.66	22.548	8.327	19.52	13.14
30 x 12 x 40.8	139.40	541.36	912.12	10,489.02	12.10	19.375	11.500	41.00	30.00
35.7	122.35	485.00	888.24	9,685.72	12.06	19.971	10.904	35.98	26.25
30.6	105.19	426.01	863.60	8,808.01	11.96	20.676	10.199	30.94	22.50
25.5	87.92	364.14	837.89	7,836.99	11.78	21.522	9.353	25.86	18.75
20.4	70.55	299.14	810.50	6,746.03	11.46	22.552	8.323	20.75	15.00
17.85	61.89	265.63	795.93	6,149.10	11.22	23.149	7.726	18.20	13.14
30 x 9 x 40.8	129.20	464.01	878.10	9,373.21	11.69	20.201	10.674	38.00	30.00
35.7	113.42	416.09	855.48	8,642.92	11.62	20.772	10.103	33.36	26.25
30.6	97.54	365.82	832.05	7,845.45	11.50	21.446	9.429	28.69	22.50
25.5	81.55	313.01	807.48	6,964.53	11.29	22.250	8.625	23.98	18.75
20.4	65.45	257.40	781.11	5,977.51	10.95	23.222	7.653	19.25	15.00
17.85	57.43	228.69	766.98	5,439.08	10.70	23.783	7.092	16.89	13.14
30 x 6 x 40.8	119.00	386.49	834.41	8,155.39	11.15	21.101	9.774	35.00	30.00
35.7	104.50	347.05	813.48	7,510.90	11.06	21.642	9.233	30.73	26.25
30.6	89.89	305.56	791.68	6,806.99	10.92	22.277	8.598	26.44	22.50
25.5	75.17	261.83	768.64	6,030.04	10.69	23.030	7.845	22.11	18.75
20.4	60.35	215.64	743.69	5,161.34	10.33	23.935	6.940	17.75	15.00
17.85	52.96	191.74	730.17	4,688.66	10.07	24.454	6.421	15.58	13.14
27 x 27 x 40.8	180.20	816.37	893.17	11,889.34	11.92	14.564	13.311	53.00	27.00
35.7	158.05	730.17	871.07	11,072.25	11.98	15.164	12.711	46.48	23.62
30.6	135.79	640.10	848.37	10,169.73	12.01	15.888	11.987	39.94	20.25



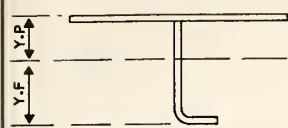
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	545.90	824.84	9,156.74	11.96	16.774	11.101	33.36	16.87
20.4	90.95	447.24	800.02	7,996.49	11.81	17.880	9.995	26.75	13.50
17.85	79.76	396.55	786.95	7,350.06	11.66	18.535	9.340	23.46	11.83
27 x 24 x 40.8	170.00	747.25	881.58	11,273.66	11.82	15.087	12.788	50.00	27.00
35.7	149.12	668.42	859.80	10,482.74	11.86	15.683	12.192	43.86	23.62
30.6	128.14	586.05	837.40	9,610.34	11.86	16.399	11.476	37.69	20.25
25.5	107.05	499.88	814.13	8,633.27	11.79	17.271	10.604	31.48	16.87
20.4	85.85	409.62	789.50	7,517.74	11.60	18.353	9.522	25.25	13.50
17.85	75.30	363.23	776.49	6,898.24	11.43	18.991	8.884	22.15	11.83
27 x 21 x 40.8	159.80	677.95	867.98	10,610.40	11.69	15.651	12.224	47.00	27.00
35.7	140.20	606.54	846.59	9,850.17	11.71	16.240	11.635	41.23	23.62
30.6	120.49	531.91	824.55	9,012.86	11.68	16.944	10.931	35.44	20.25
25.5	100.67	453.81	801.60	8,077.21	11.58	17.799	10.076	29.61	16.87
20.4	80.75	371.97	777.21	7,012.58	11.36	18.852	9.023	23.75	13.50
17.85	70.83	329.90	764.28	6,423.35	11.17	19.471	8.404	20.83	11.83
27 x 18 x 40.8	149.60	608.48	851.80	9,893.83	11.51	16.260	11.615	44.00	27.00
35.7	131.27	544.55	830.89	9,169.65	11.51	16.839	11.036	38.61	23.62
30.6	112.84	477.69	809.29	8,373.25	11.46	17.529	10.346	33.19	20.25
25.5	94.30	407.69	786.73	7,485.42	11.33	18.360	9.515	27.73	16.87
20.4	75.65	334.30	762.66	6,478.75	11.07	19.380	8.495	22.25	13.50
17.85	66.36	296.55	749.82	5,923.57	10.87	19.975	7.900	19.52	11.83
27 x 15 x 40.8	139.40	538.85	832.24	9,117.26	11.28	16.920	10.955	41.00	27.00
35.7	122.35	482.43	811.92	8,435.50	11.25	17.485	10.390	35.98	23.62
30.6	105.19	423.39	790.88	7,686.90	11.17	18.156	9.719	30.94	20.25
25.5	87.92	361.53	768.81	6,854.35	11.02	18.960	8.915	25.86	16.87
20.4	70.55	296.60	745.14	5,913.76	10.73	19.939	7.936	20.75	13.50
17.85	61.89	263.18	732.45	5,396.89	10.51	20.507	7.368	18.20	11.83
27 x 12 x 40.8	129.20	469.04	808.11	8,272.81	10.98	17.638	10.237	38.00	27.00
35.7	113.42	420.19	788.54	7,641.13	10.93	18.185	9.690	33.36	23.62
30.6	97.54	369.01	768.22	6,948.48	10.82	18.830	9.045	28.69	20.25
25.5	81.55	315.31	746.80	6,179.95	10.64	19.600	8.275	23.98	16.87
20.4	65.45	258.87	723.66	5,314.78	10.32	20.531	7.344	19.25	13.50
17.85	57.43	229.79	711.17	4,841.08	10.09	21.068	6.807	16.89	11.83
27 x 9 x 40.8	119.00	399.06	777.59	7,351.17	10.58	18.421	9.454	35.00	27.00
35.7	104.50	357.83	759.03	6,778.80	10.51	18.944	8.931	30.73	23.62
30.6	89.89	314.55	739.65	6,151.83	10.38	19.558	8.317	26.44	20.25
25.5	75.17	269.04	719.10	5,457.59	10.17	20.286	7.589	22.11	16.87
20.4	60.35	221.11	696.70	4,678.65	9.83	21.160	6.715	17.75	13.50
17.85	52.96	196.38	684.50	4,253.66	9.60	21.661	6.214	15.58	11.83
27 x 6 x 40.8	108.80	328.91	737.76	6,341.26	10.06	19.280	8.595	32.00	27.00
35.7	95.57	295.35	720.58	5,839.41	9.97	19.771	8.104	28.11	23.62
30.6	82.24	260.00	702.51	5,289.79	9.82	20.345	7.530	24.19	20.25
25.5	68.80	222.72	683.19	4,681.97	9.59	21.022	6.853	20.23	16.87
20.4	55.25	183.33	661.86	4,001.82	9.24	21.829	6.046	16.25	13.50
17.85	48.49	162.95	650.10	3,631.84	9.00	22.288	5.587	14.26	11.83
24 x 24 x 40.8	159.80	648.63	769.92	8,757.14	10.62	13.501	11.374	47.00	24.00
35.7	140.20	580.31	752.69	8,150.98	10.65	14.046	10.829	41.23	21.00
30.6	120.49	508.81	734.84	7,478.49	10.64	14.698	10.177	35.44	18.00
25.5	100.67	433.93	716.11	6,721.26	10.56	15.489	9.386	29.61	15.00
20.4	80.75	355.45	696.02	5,852.79	10.37	16.466	8.409	23.75	12.00
17.85	70.83	315.11	685.25	5,369.25	10.21	17.040	7.835	20.83	10.51
24 x 22 x 40.8	153.00	607.45	762.45	8,409.98	10.55	13.845	11.030	45.00	24.00
35.7	134.25	543.51	745.38	7,818.71	10.56	14.386	10.489	39.48	21.00
30.6	115.39	476.60	727.68	7,163.55	10.53	15.031	9.844	33.94	18.00
25.5	96.42	406.50	709.08	6,427.20	10.44	15.811	9.064	28.36	15.00
20.4	77.35	333.03	689.06	5,584.89	10.23	16.770	8.105	22.75	12.00
17.85	67.85	295.26	678.29	5,117.09	10.06	17.331	7.544	19.96	10.51



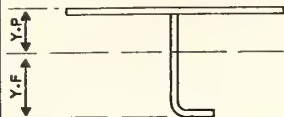
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	I	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	566.19	754.05	8,043.97	10.45	14.207	10.668	43.00	24.00
35.7	128.30	506.66	737.18	7,469.42	10.45	14.743	10.132	37.73	21.00
30.6	110.29	444.34	719.65	6,833.63	10.41	15.379	9.496	32.44	18.00
25.5	92.17	379.06	701.19	6,120.41	10.30	16.146	8.729	27.11	15.00
20.4	73.95	310.60	681.25	5,306.75	10.07	17.085	7.790	21.75	12.00
17.85	64.87	275.40	670.49	4,856.05	9.88	17.632	7.243	19.08	10.51
24 x 18 x 40.8	139.40	524.85	744.54	7,657.53	10.34	14.590	10.285	41.00	24.00
35.7	122.35	469.74	727.90	7,101.79	10.33	15.118	9.757	35.98	21.00
30.6	105.19	412.05	710.58	6,487.64	10.27	15.745	9.130	30.94	18.00
25.5	87.92	351.58	692.28	5,800.04	10.13	16.497	8.378	25.86	15.00
20.4	70.55	288.16	672.45	5,017.78	9.88	17.413	7.462	20.75	12.00
17.85	61.89	255.54	661.69	4,585.65	9.69	17.945	6.930	18.20	10.51
24 x 16 x 40.8	132.60	483.43	733.68	7,248.90	10.20	14.995	9.880	39.00	24.00
35.7	116.40	432.78	717.31	6,714.32	10.17	15.515	9.360	34.23	21.00
30.6	100.09	379.72	700.23	6,124.37	10.10	16.129	8.746	29.44	18.00
25.5	83.67	324.09	682.13	5,465.17	9.95	16.836	8.012	24.61	15.00
20.4	67.15	265.71	662.43	4,717.34	9.68	17.754	7.121	19.75	12.00
17.85	58.92	235.67	651.70	4,305.36	9.48	18.269	6.606	17.33	10.51
24 x 14 x 40.8	125.80	441.93	721.17	6,816.10	10.04	15.424	9.451	37.00	24.00
35.7	110.45	395.75	705.11	6,305.38	10.00	15.933	8.942	32.48	21.00
30.6	94.99	347.35	688.32	5,742.49	9.90	16.532	8.343	27.94	18.00
25.5	79.42	296.57	670.47	5,114.80	9.73	17.246	7.629	23.36	15.00
20.4	63.75	243.24	650.94	4,404.73	9.45	18.108	6.767	18.75	12.00
17.85	55.94	215.79	640.25	4,014.64	9.23	18.605	6.270	16.45	10.51
24 x 12 x 40.8	119.00	400.35	706.59	6,356.94	9.84	15.878	8.997	35.00	24.00
35.7	104.50	358.67	690.92	5,873.11	9.78	16.375	8.500	30.73	21.00
30.6	89.89	314.95	674.48	5,340.55	9.67	16.957	7.918	26.44	18.00
25.5	75.17	269.03	656.93	4,747.82	9.49	17.648	7.227	22.11	15.00
20.4	60.35	220.77	637.62	4,079.20	9.18	18.477	6.398	17.75	12.00
17.85	52.96	195.90	626.98	3,712.90	8.96	18.953	5.922	15.58	10.51
24 x 10 x 40.8	112.20	358.70	689.39	5,868.92	9.60	16.362	8.513	33.00	24.00
35.7	98.55	321.54	674.19	5,415.46	9.53	16.842	8.033	28.98	21.00
30.6	84.79	282.50	658.19	4,916.90	9.41	17.405	7.470	24.94	18.00
25.5	70.92	241.47	641.02	4,363.02	9.21	18.069	6.806	20.86	15.00
20.4	56.95	198.28	621.99	3,739.93	8.89	18.862	6.013	16.75	12.00
17.85	49.98	176.00	611.44	3,399.50	8.66	19.315	5.560	14.70	10.51
24 x 8 x 40.8	105.40	316.96	668.78	5,349.23	9.32	16.877	7.998	31.00	24.00
35.7	92.60	284.34	654.18	4,930.14	9.23	17.339	7.536	27.23	21.00
30.6	79.69	250.03	638.73	4,469.74	9.09	17.877	6.998	23.44	18.00
25.5	66.67	213.88	622.05	3,959.07	8.88	18.511	6.364	19.61	15.00
20.4	53.55	175.77	603.41	3,386.03	8.54	19.264	5.611	15.75	12.00
17.85	47.00	156.09	592.99	3,073.74	8.32	19.692	5.183	13.82	10.51
24 x 6 x 40.8	98.60	275.15	643.66	4,794.69	8.97	17.426	7.449	29.00	24.00
35.7	86.65	247.10	629.82	4,414.56	8.87	17.866	7.009	25.48	21.00
30.6	74.59	217.51	615.09	3,997.07	8.72	18.377	6.498	21.94	18.00
25.5	62.42	186.27	599.06	3,534.50	8.49	18.975	5.900	18.36	15.00
20.4	50.15	153.26	580.95	3,016.52	8.15	19.683	5.192	14.75	12.00
17.85	44.02	136.18	570.73	2,734.89	7.92	20.083	4.792	12.95	10.51
21 x 20 x 40.8	136.00	480.98	647.83	6,038.29	9.25	12.554	9.321	40.00	21.00
35.7	119.37	430.53	634.86	5,612.09	9.24	13.035	8.840	35.11	18.37
30.6	102.64	377.63	621.24	5,137.65	9.19	13.605	8.270	30.19	15.75
25.5	85.80	322.12	606.69	4,602.66	9.08	14.288	7.587	25.23	13.12
20.4	68.85	263.88	590.63	3,989.80	8.86	15.120	6.755	20.25	10.50
17.85	60.40	233.92	581.77	3,649.60	8.68	15.602	6.273	17.77	9.20
21 x 18 x 40.8	129.20	444.70	639.84	5,739.05	9.14	12.905	8.970	38.00	21.00
35.7	113.42	398.11	627.01	5,326.65	9.12	13.380	8.495	33.36	18.37
30.6	97.54	349.25	613.51	4,868.39	9.06	13.940	7.935	28.69	15.75



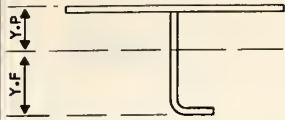
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	297.97	599.02	4,352.87	8.93	14.608	7.267	23.98	13.12
20.4	65.45	244.15	582.97	3,764.24	8.69	15.418	6.457	19.25	10.50
17.85	57.43	216.46	574.06	3,438.48	8.51	15.885	5.990	16.89	9.20
21 x 16 x 40.8	122.40	408.34	630.66	5,421.85	9.02	13.278	8.597	36.00	21.00
35.7	107.47	365.64	618.00	5,025.17	8.99	13.744	8.131	31.61	18.37
30.6	92.44	320.83	604.63	4,585.16	8.91	14.292	7.583	27.19	15.75
25.5	77.30	273.79	590.24	4,091.38	8.76	14.943	6.932	22.73	13.12
20.4	62.05	224.40	574.20	3,529.44	8.50	15.728	6.147	18.25	10.50
17.85	54.45	198.98	565.26	3,219.43	8.31	16.180	5.695	16.01	9.20
21 x 14 x 40.8	115.60	371.89	620.00	5,085.03	8.87	13.673	8.202	34.00	21.00
35.7	101.52	333.10	607.54	4,706.25	8.82	14.129	7.746	29.86	18.37
30.6	87.34	292.37	594.35	4,286.85	8.73	14.662	7.213	25.69	15.75
25.5	73.05	249.59	580.08	3,817.35	8.56	15.294	6.581	21.48	13.12
20.4	58.65	204.64	564.08	3,284.84	8.28	16.052	5.823	17.25	10.50
17.85	51.47	181.50	555.11	2,991.99	8.09	16.485	5.390	15.14	9.20
21 x 12 x 40.8	108.80	335.37	607.47	4,726.70	8.69	14.094	7.781	32.00	21.00
35.7	95.57	300.51	595.27	4,368.33	8.62	14.537	7.338	28.11	18.37
30.6	82.24	263.88	582.29	3,972.20	8.51	15.053	6.822	24.19	15.75
25.5	68.80	225.37	568.18	3,529.85	8.33	15.662	6.213	20.23	13.12
20.4	55.25	184.87	552.25	3,029.80	8.04	16.389	5.486	16.25	10.50
17.85	48.49	164.00	543.26	2,755.68	7.84	16.803	5.072	14.26	9.20
21 x 10 x 40.8	102.00	298.76	592.54	4,344.74	8.47	14.543	7.332	30.00	21.00
35.7	89.62	267.85	580.65	4,009.67	8.39	14.970	6.905	26.36	18.37
30.6	77.14	235.34	567.96	3,639.86	8.26	15.466	6.409	22.69	15.75
25.5	64.55	201.12	554.07	3,227.86	8.07	16.049	5.826	18.98	13.12
20.4	51.85	165.09	538.25	2,763.64	7.76	16.741	5.134	15.25	10.50
17.85	45.51	146.50	529.26	2,509.96	7.55	17.133	4.742	13.39	9.20
21 x 8 x 40.8	95.20	262.07	574.42	3,936.74	8.19	15.022	6.853	28.00	21.00
35.7	83.67	235.14	562.96	3,628.28	8.10	15.430	6.445	24.61	18.37
30.6	72.04	206.77	550.64	3,288.28	7.97	15.903	5.972	21.19	15.75
25.5	60.30	176.85	537.05	2,910.26	7.76	16.456	5.419	17.73	13.12
20.4	48.45	145.29	521.42	2,485.62	7.44	17.108	4.767	14.25	10.50
17.85	42.53	128.99	512.46	2,254.26	7.23	17.476	4.399	12.51	9.20
21 x 6 x 40.8	88.40	225.30	552.00	3,499.92	7.86	15.535	6.340	26.00	21.00
35.7	77.72	202.38	541.10	3,221.94	7.76	15.921	5.954	22.86	18.37
30.6	66.94	178.16	529.28	2,915.74	7.61	16.366	5.509	19.69	15.75
25.5	56.05	152.56	516.13	2,575.81	7.39	16.884	4.991	16.48	13.12
20.4	45.05	125.48	500.81	2,194.93	7.07	17.492	4.383	13.25	10.50
17.85	39.56	111.47	491.93	1,987.96	6.86	17.834	4.041	11.63	9.20
18 x 18 x 40.8	119.00	368.11	537.65	4,124.27	7.93	11.204	7.671	35.00	18.00
35.7	104.50	329.72	528.16	3,831.52	7.90	11.621	7.254	30.73	15.75
30.6	89.89	289.35	518.00	3,504.12	7.84	12.110	6.765	26.44	13.50
25.5	75.17	246.91	506.86	3,133.79	7.71	12.692	6.183	22.11	11.25
20.4	60.35	202.29	494.12	2,709.16	7.48	13.392	5.483	17.75	9.00
15.3	45.42	155.41	478.42	2,214.17	7.10	14.247	4.628	13.36	6.75
18 x 16 x 40.8	112.20	336.88	530.07	3,887.75	7.82	11.541	7.334	33.00	18.00
35.7	98.55	301.80	520.66	3,606.13	7.78	11.949	6.926	28.98	15.75
30.6	84.79	264.90	510.54	3,291.90	7.70	12.427	6.448	24.94	13.50
25.5	70.92	226.09	499.39	2,937.53	7.55	12.993	5.882	20.86	11.25
20.4	56.95	185.29	486.57	2,532.78	7.31	13.670	5.205	16.75	9.00
15.3	42.87	142.39	470.63	2,063.34	6.91	14.491	4.384	12.61	6.75
18 x 14 x 40.8	105.40	305.57	521.19	3,635.88	7.68	11.899	6.976	31.00	18.00
35.7	92.60	273.81	511.88	3,367.11	7.63	12.297	6.578	27.23	15.75
30.6	79.69	240.40	501.83	3,067.90	7.53	12.762	6.113	23.44	13.50
25.5	66.67	205.25	490.69	2,731.50	7.37	13.308	5.567	19.61	11.25
20.4	53.55	168.26	477.78	2,348.79	7.12	13.959	4.916	15.75	9.00
15.3	40.32	129.36	461.60	1,907.18	6.70	14.743	4.132	11.86	6.75



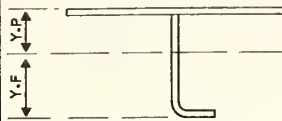
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	I	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	274.17	510.65	3,367.13	7.51	12.281	6.594	29.00	18.00
35.7	86.65	245.77	501.48	3,113.18	7.45	12.667	6.208	25.48	15.75
30.6	74.59	215.87	491.52	2,831.12	7.34	13.115	5.760	21.94	13.50
25.5	62.42	184.38	480.41	2,514.96	7.17	13.640	5.235	18.36	11.25
20.4	50.15	151.23	467.43	2,156.69	6.89	14.261	4.614	14.75	9.00
15.3	37.77	116.32	451.00	1,745.42	6.47	15.005	3.870	11.11	6.75
18 x 10 x 40.8	91.80	242.69	497.95	3,079.74	7.31	12.690	6.185	27.00	18.00
35.7	80.70	217.67	488.95	2,842.92	7.23	13.061	5.814	23.73	15.75
30.6	69.49	191.29	479.13	2,580.44	7.11	13.489	5.386	20.44	13.50
25.5	58.17	163.49	468.09	2,287.07	6.92	13.989	4.886	17.11	11.25
20.4	46.75	134.18	455.06	1,955.93	6.64	14.577	4.298	13.75	9.00
15.3	35.22	103.28	438.38	1,577.73	6.20	15.276	3.599	10.36	6.75
18 x 8 x 40.8	85.00	211.12	482.32	2,771.69	7.06	13.128	5.747	25.00	18.00
35.7	74.75	189.51	473.58	2,554.68	6.97	13.481	5.394	21.98	15.75
30.6	64.39	166.68	463.96	2,314.58	6.83	13.886	4.989	18.94	13.50
25.5	53.92	142.58	453.04	2,046.94	6.64	14.357	4.518	15.86	11.25
20.4	43.35	117.12	440.02	1,745.92	6.34	14.907	3.968	12.75	9.00
15.3	32.67	90.23	423.12	1,403.79	5.91	15.557	3.318	9.61	6.75
18 x 6 x 40.8	78.20	179.47	462.63	2,440.67	6.75	13.599	5.276	23.00	18.00
35.7	68.80	161.29	454.26	2,246.61	6.65	13.929	4.946	20.23	15.75
30.6	59.29	142.03	444.95	2,032.13	6.50	14.308	4.567	17.44	13.50
25.5	49.67	121.64	434.26	1,793.53	6.30	14.745	4.130	14.61	11.25
20.4	39.95	100.05	421.32	1,526.00	6.00	15.253	3.622	11.75	9.00
15.3	30.12	77.18	404.28	1,223.24	5.57	15.849	3.026	8.86	6.75



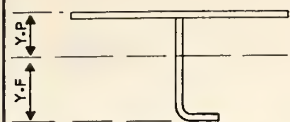
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,031.76	1,255.53	17,556.85	13.32	17.016	13.984	59.00	30.00
35.7	175.90	920.74	1,227.60	16,309.95	13.33	17.714	13.286	51.73	26.25
30.6	151.09	805.25	1,198.76	14,932.23	13.30	18.544	12.456	44.44	22.50
25.5	126.17	685.01	1,168.61	13,387.74	13.18	19.544	11.456	37.11	18.75
20.4	101.15	559.71	1,136.37	11,625.10	12.91	20.770	10.230	29.75	15.00
17.85	88.70	495.57	1,119.12	10,647.72	12.69	21.486	9.514	26.09	13.14
30 x 27 x 40.8	190.40	953.24	1,240.97	16,712.65	13.19	17.533	13.467	56.00	30.00
35.7	166.97	850.75	1,213.36	15,503.20	13.19	18.223	12.777	49.11	26.25
30.6	143.44	744.13	1,184.81	14,169.06	13.13	19.041	11.959	42.19	22.50
25.5	119.80	633.11	1,154.88	12,676.93	12.98	20.023	10.977	35.23	18.75
20.4	96.05	517.39	1,122.76	10,979.58	12.68	21.221	9.779	28.25	15.00
17.85	84.23	458.15	1,105.52	10,041.36	12.45	21.917	9.083	24.77	13.14
30 x 24 x 40.8	180.20	874.57	1,224.18	15,814.00	13.04	18.082	12.918	53.00	30.00
35.7	158.05	780.67	1,196.96	14,647.48	13.01	18.763	12.237	46.48	26.25
30.6	135.79	682.95	1,168.75	13,362.94	12.93	19.566	11.434	39.94	22.50
25.5	113.42	581.18	1,139.10	11,929.79	12.75	20.527	10.473	33.36	18.75
20.4	90.95	475.06	1,107.14	10,305.06	12.43	21.692	9.308	26.75	15.00
17.85	79.76	420.72	1,089.91	9,409.89	12.18	22.366	8.634	23.46	13.14
30 x 21 x 40.8	170.00	795.77	1,204.63	14,855.46	12.85	18.668	12.332	50.00	30.00
35.7	149.12	710.48	1,177.87	13,738.21	12.80	19.336	11.664	43.86	26.25
30.6	128.14	621.71	1,150.07	12,510.14	12.69	20.122	10.878	37.69	22.50
25.5	107.05	529.20	1,120.76	11,143.47	12.49	21.057	9.943	31.48	18.75
20.4	85.85	432.70	1,089.01	9,599.52	12.13	22.185	8.815	25.25	15.00
17.85	75.30	383.27	1,071.81	8,751.72	11.87	22.835	8.165	22.15	13.14
30 x 18 x 40.8	159.80	716.83	1,181.57	13,830.83	12.61	19.295	11.705	47.00	30.00
35.7	140.20	640.20	1,155.37	12,770.18	12.54	19.947	11.053	41.23	26.25
30.6	120.49	560.39	1,128.07	11,606.47	12.40	20.711	10.289	35.44	22.50
25.5	100.67	477.18	1,099.18	10,314.78	12.17	21.616	9.384	29.61	18.75
20.4	80.75	390.32	1,067.72	8,860.79	11.79	22.701	8.299	23.75	15.00
17.85	70.83	345.80	1,050.57	8,065.12	11.51	23.323	7.677	20.83	13.14
30 x 15 x 40.8	149.60	637.74	1,153.96	12,733.03	12.31	19.966	11.034	44.00	30.00
35.7	131.27	569.82	1,128.45	11,737.51	12.22	20.599	10.401	38.61	26.25
30.6	112.84	499.02	1,101.79	10,647.24	12.06	21.336	9.664	33.19	22.50
25.5	94.30	425.13	1,073.45	9,440.22	11.81	22.206	8.794	27.73	18.75
20.4	75.65	347.92	1,042.37	8,086.45	11.40	23.242	7.758	22.25	15.00
17.85	66.36	308.32	1,025.31	7,348.20	11.11	23.833	7.167	19.52	13.14
30 x 12 x 40.8	139.40	558.52	1,120.30	11,553.93	11.94	20.687	10.313	41.00	30.00
35.7	122.35	499.34	1,095.68	10,633.50	11.83	21.295	9.705	35.98	26.25
30.6	105.19	437.57	1,069.84	9,627.17	11.65	22.001	8.999	30.94	22.50
25.5	87.92	373.03	1,042.20	8,515.86	11.37	22.829	8.171	25.86	18.75
20.4	70.55	305.50	1,011.66	7,273.88	10.94	23.810	7.190	20.75	15.00
17.85	61.89	270.82	994.75	6,598.91	10.65	24.366	6.634	18.20	13.14
30 x 9 x 40.8	129.20	479.15	1,078.36	10,284.14	11.48	21.463	9.537	38.00	30.00
35.7	113.42	428.76	1,054.91	9,450.49	11.35	22.041	8.959	33.36	26.25
30.6	97.54	376.06	1,030.15	8,540.27	11.15	22.710	8.290	28.69	22.50
25.5	81.55	320.89	1,003.48	7,379.77	10.85	23.489	7.511	23.98	18.75
20.4	65.45	263.05	973.69	6,420.16	10.41	24.406	6.594	19.25	15.00
17.85	57.43	233.31	957.05	5,815.01	10.11	24.924	6.076	16.89	13.14
30 x 6 x 40.8	119.00	399.65	1,024.66	8,912.80	10.90	22.302	8.698	35.00	30.00
35.7	104.50	358.08	1,002.80	8,179.69	10.75	22.843	8.157	30.73	26.25
30.6	89.89	314.49	979.54	7,379.77	10.54	23.466	7.534	26.44	22.50
25.5	75.17	268.71	954.22	6,499.73	10.23	24.188	6.812	22.11	18.75
20.4	60.35	220.59	925.57	5,522.10	9.78	25.034	5.966	17.75	15.00
17.85	52.96	195.78	909.35	4,994.04	9.48	25.508	5.492	15.58	13.14
27 x 27 x 40.8	180.20	839.98	1,101.92	13,345.97	11.98	15.888	12.112	53.00	27.00
35.7	158.05	749.70	1,079.39	12,387.71	11.97	16.523	11.477	46.48	23.62



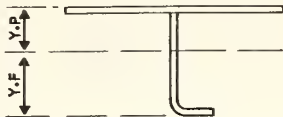
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	I	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ⁴
27 x 27 x 30.6	135.79	655.69	1,055.92	11,326.21	11.90	17.274	10.726	39.94	20.25
25.5	113.42	557.74	1,031.07	10,134.62	11.75	18.171	9.829	33.36	16.87
20.4	90.95	455.63	1,003.98	8,775.23	11.47	19.260	8.740	26.75	13.50
17.85	79.76	403.36	989.21	8,022.72	11.24	19.890	8.110	23.46	11.83
27 x 24 x 40.8	170.00	768.94	1,087.34	12,611.62	11.84	16.401	11.599	50.00	27.00
35.7	149.12	686.38	1,065.07	11,687.03	11.81	17.027	10.973	43.86	23.62
30.6	128.14	600.40	1,041.81	10,664.98	11.72	17.763	10.237	37.69	20.25
25.5	107.05	510.80	1,017.10	9,520.91	11.54	18.639	9.361	31.48	16.87
20.4	85.85	417.37	990.04	8,220.69	11.22	19.697	8.303	25.25	13.50
17.85	75.30	369.53	975.20	7,503.51	10.99	20.306	7.694	22.15	11.83
27 x 21 x 40.8	159.80	697.75	1,070.26	11,826.65	11.66	16.950	11.050	47.00	27.00
35.7	140.20	622.96	1,048.31	10,941.09	11.61	17.563	10.437	41.23	23.62
30.6	120.49	545.04	1,025.31	9,964.31	11.49	18.282	9.718	35.44	20.25
25.5	100.67	463.82	1,000.78	8,874.14	11.29	19.133	8.867	29.61	16.87
20.4	80.75	379.08	973.77	7,640.06	10.95	20.154	7.846	23.75	13.50
17.85	70.83	335.68	958.88	6,961.87	10.70	20.740	7.260	20.83	11.83
27 x 18 x 40.8	149.60	626.42	1,049.97	10,985.63	11.44	17.537	10.463	44.00	27.00
35.7	131.27	559.44	1,028.41	10,145.34	11.36	18.135	9.865	38.61	23.62
30.6	112.84	489.62	1,005.75	9,220.56	11.22	18.832	9.168	33.19	20.25
25.5	94.30	416.79	981.47	8,191.56	11.00	19.654	8.346	27.73	16.87
20.4	75.65	340.77	954.55	7,031.44	10.63	20.634	7.366	22.25	13.50
17.85	66.36	301.82	939.62	6,396.31	10.37	21.193	6.807	19.52	11.83
27 x 15 x 40.8	139.40	554.94	1,025.48	10,082.33	11.16	18.168	9.832	41.00	27.00
35.7	122.35	495.81	1,004.43	9,294.62	11.06	18.746	9.254	35.98	23.62
30.6	105.19	434.12	982.20	8,429.64	10.90	19.418	8.582	30.94	20.25
25.5	87.92	369.73	958.25	7,470.12	10.65	20.204	7.796	25.86	16.87
20.4	70.55	302.44	931.50	6,392.77	10.26	21.137	6.863	20.75	13.50
17.85	61.89	267.94	916.53	5,805.22	9.99	21.666	6.334	18.20	11.83
27 x 12 x 40.8	129.20	483.32	995.34	9,109.57	10.81	18.848	9.152	38.00	27.00
35.7	113.42	432.08	974.94	8,383.03	10.69	19.401	8.599	33.36	23.62
30.6	97.54	378.56	953.29	7,586.92	10.51	20.041	7.959	28.69	20.25
25.5	81.55	322.62	929.81	6,706.40	10.24	20.787	7.213	23.98	16.87
20.4	65.45	264.09	903.32	5,721.77	9.83	21.666	6.334	19.25	13.50
17.85	57.43	234.05	888.38	5,186.83	9.55	22.161	5.839	16.89	11.83
27 x 9 x 40.8	119.00	411.56	957.32	8,059.00	10.37	19.582	8.418	35.00	27.00
35.7	104.50	368.25	937.81	7,403.80	10.23	20.105	7.895	30.73	23.62
30.6	89.89	322.93	916.97	6,687.11	10.03	20.707	7.293	26.44	20.25
25.5	75.17	275.47	894.16	5,896.58	9.74	21.405	6.595	22.11	16.87
20.4	60.35	225.72	868.12	5,015.91	9.32	22.222	5.778	17.75	13.50
17.85	52.96	200.14	853.28	4,539.19	9.04	22.680	5.320	15.58	11.83
27 x 6 x 40.8	108.80	339.65	907.87	6,920.91	9.80	20.377	7.623	32.00	27.00
35.7	95.57	304.32	889.63	6,349.09	9.66	20.863	7.137	28.11	23.62
30.6	82.24	267.24	869.96	5,724.24	9.44	21.420	6.580	24.19	20.25
25.5	68.80	228.28	848.16	5,036.34	9.14	22.062	5.938	20.23	16.87
20.4	55.25	187.32	822.89	4,272.40	8.72	22.808	5.192	16.25	13.50
17.85	48.49	166.21	808.28	3,860.19	8.43	23.224	4.776	14.26	11.83
24 x 24 x 40.8	159.80	666.83	953.00	9,807.97	10.62	14.708	10.292	47.00	24.00
35.7	140.20	595.31	935.21	9,094.03	10.58	15.276	9.724	41.23	21.00
30.6	120.49	520.74	916.43	8,301.45	10.49	15.942	9.058	35.44	18.00
25.5	100.67	442.97	896.18	7,411.04	10.32	16.730	8.270	29.61	15.00
20.4	80.75	361.83	873.55	6,396.39	10.02	17.678	7.322	23.75	12.00
17.85	70.83	320.29	860.88	5,836.03	9.79	18.221	6.779	20.83	10.51
24 x 22 x 40.8	153.00	624.53	943.48	9,394.55	10.51	15.043	9.957	45.00	24.00
35.7	134.25	557.60	925.81	8,700.12	10.46	15.603	9.397	39.48	21.00
30.6	115.39	487.81	907.11	7,930.53	10.36	16.257	8.743	33.94	18.00
25.5	96.42	415.01	886.89	7,067.91	10.17	17.031	7.969	28.36	15.00



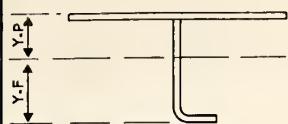
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 22 x 20.4	77.35	339.05	864.18	6,087.80	9.85	17.955	7.045	22.75	12.00
17.85	67.85	300.15	851.42	5,547.98	9.62	18.484	6.516	19.96	10.51
24 x 20 x 40.8	146.20	582.16	932.79	8,961.22	10.39	15.393	9.607	43.00	24.00
35.7	128.30	519.85	915.26	8,288.47	10.33	15.944	9.056	37.73	21.00
30.6	110.29	454.85	896.66	7,544.25	10.21	16.586	8.414	32.44	18.00
25.5	92.17	387.04	876.47	6,711.99	10.00	17.342	7.658	27.11	15.00
20.4	73.95	316.26	853.71	5,769.22	9.67	18.242	6.758	21.75	12.00
17.85	64.87	280.00	840.86	5,251.40	9.43	18.755	6.245	19.08	10.51
24 x 18 x 40.8	139.40	539.72	920.70	8,506.49	10.25	15.761	9.239	41.00	24.00
35.7	122.35	482.04	903.33	7,857.87	10.17	16.301	8.699	35.98	21.00
30.6	105.19	421.86	884.86	7,141.63	10.03	16.929	8.071	30.94	18.00
25.5	87.92	359.04	864.73	6,342.56	9.81	17.665	7.335	25.86	15.00
20.4	70.55	293.45	841.91	5,440.15	9.46	18.538	6.462	20.75	12.00
17.85	61.89	259.85	828.97	4,945.88	9.22	19.034	5.966	18.20	10.51
24 x 16 x 40.8	132.60	497.22	906.91	8,028.75	10.08	16.147	8.853	39.00	24.00
35.7	116.40	444.19	889.75	7,406.98	9.99	16.675	8.325	34.23	21.00
30.6	100.09	388.83	871.43	6,721.63	9.84	17.287	7.713	29.44	18.00
25.5	83.67	331.03	851.38	5,958.84	9.60	18.001	6.999	24.61	15.00
20.4	67.15	270.64	828.53	5,100.07	9.24	18.844	6.156	19.75	12.00
17.85	58.92	239.69	815.49	4,631.03	8.99	19.321	5.679	17.33	10.51
24 x 14 x 40.8	125.80	454.66	891.05	7,526.20	9.89	16.554	8.446	37.00	24.00
35.7	110.45	406.29	874.14	6,934.32	9.78	17.067	7.933	32.48	21.00
30.6	94.99	355.78	856.01	6,283.08	9.62	17.660	7.340	27.94	18.00
25.5	79.42	303.00	836.08	5,559.98	9.37	18.350	6.650	23.36	15.00
20.4	63.75	247.82	813.21	4,748.41	8.99	19.161	5.839	18.75	12.00
17.85	55.94	219.52	800.09	4,306.41	8.73	19.618	5.382	16.45	10.51
24 x 12 x 40.8	119.00	412.02	872.61	6,996.85	9.66	16.982	8.018	35.00	24.00
35.7	104.50	368.35	856.00	6,438.27	9.54	17.479	7.521	30.73	21.00
30.6	89.89	322.69	838.13	5,824.73	9.36	18.050	6.950	26.44	18.00
25.5	75.17	274.95	818.36	5,145.06	9.10	18.713	6.287	22.11	15.00
20.4	60.35	224.98	795.51	4,384.58	8.71	19.488	5.512	17.75	12.00
17.85	52.96	199.34	782.32	3,971.56	8.45	19.923	5.077	15.58	10.51
24 x 10 x 40.8	112.20	369.32	850.89	6,438.51	9.39	17.433	7.567	33.00	24.00
35.7	98.55	330.36	834.68	5,917.07	9.26	17.911	7.089	28.98	21.00
30.6	84.79	289.58	817.13	5,345.21	9.07	18.459	6.541	24.94	18.00
25.5	70.92	246.88	797.60	4,713.11	8.80	19.091	5.909	20.86	15.00
20.4	56.95	202.14	774.83	4,007.92	8.40	19.827	5.173	16.75	12.00
17.85	49.98	179.16	761.59	3,625.98	8.14	20.239	4.761	14.70	10.51
24 x 8 x 40.8	105.40	326.56	824.95	5,848.72	9.08	17.910	7.090	31.00	24.00
35.7	92.60	292.32	809.25	5,368.73	8.94	18.366	6.634	27.23	21.00
30.6	79.69	256.43	792.14	4,843.02	8.74	18.886	6.114	23.44	18.00
25.5	66.67	218.79	772.95	4,263.04	8.46	19.485	5.515	19.61	15.00
20.4	53.55	179.29	750.34	3,617.75	8.06	20.179	4.821	15.75	12.00
17.85	47.00	158.97	737.08	3,269.16	7.79	20.565	4.435	13.82	10.51
24 x 6 x 40.8	98.60	283.72	793.41	5,224.75	8.70	18.415	6.585	29.00	24.00
35.7	86.65	254.24	778.39	4,791.10	8.55	18.845	6.155	25.48	21.00
30.6	74.59	223.25	761.89	4,316.51	8.35	19.334	5.666	21.94	18.00
25.5	62.42	190.68	743.18	3,793.69	8.06	19.895	5.105	18.36	15.00
20.4	50.15	156.42	720.89	3,213.33	7.66	20.543	4.457	14.75	12.00
17.85	44.02	138.77	707.68	2,900.52	7.40	20.901	4.099	12.95	10.51
21 x 20 x 40.8	136.00	494.05	803.99	6,732.14	9.17	13.627	8.373	40.00	21.00
35.7	119.37	441.27	790.29	6,229.62	9.11	14.117	7.883	35.11	18.37
30.6	102.64	386.15	775.52	5,671.39	8.99	14.687	7.313	30.19	15.75
25.5	85.80	328.58	759.14	5,045.03	8.79	15.354	6.646	25.23	13.12
20.4	68.85	268.44	740.13	4,333.90	8.48	16.144	5.856	20.25	10.50
17.85	60.40	237.64	729.12	3,942.96	8.26	16.592	5.408	17.77	9.20



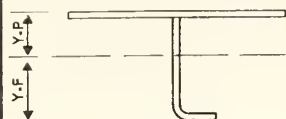
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	456.81	793.66	6,378.52	9.04	13.963	8.037	38.00	21.00
35.7	113.42	408.08	780.03	5,894.20	8.96	14.444	7.556	33.36	18.37
30.6	97.54	357.17	765.28	5,357.36	8.83	15.000	7.000	28.69	15.75
25.5	81.55	303.98	748.86	4,756.65	8.62	15.648	6.352	23.98	13.12
20.4	65.45	248.40	729.69	4,076.98	8.30	16.413	5.587	19.25	10.50
17.85	57.43	219.93	718.52	3,704.49	8.07	16.844	5.156	16.89	9.20
21 x 16 x 40.8	122.40	419.51	781.81	6,006.30	8.89	14.317	7.683	36.00	21.00
35.7	107.47	374.84	768.28	5,542.40	8.80	14.786	7.214	31.61	18.37
30.6	92.44	328.16	753.57	5,029.31	8.65	15.326	6.674	27.19	15.75
25.5	77.30	279.36	737.11	4,456.77	8.43	15.954	6.046	22.73	13.12
20.4	62.05	228.35	717.77	3,811.24	8.09	16.690	5.310	18.25	10.50
17.85	54.45	202.20	706.45	3,458.57	7.86	17.104	4.896	16.01	9.20
21 x 14 x 40.8	115.60	382.14	768.08	5,613.97	8.71	14.691	7.309	34.00	21.00
35.7	101.52	341.56	754.67	5,172.98	8.61	15.145	6.855	29.86	18.37
30.6	87.34	299.11	740.03	4,686.28	8.45	15.667	6.333	25.69	15.75
25.5	73.05	254.72	723.55	4,144.71	8.21	16.272	5.728	21.48	13.12
20.4	58.65	208.29	704.05	3,536.22	7.86	16.977	5.023	17.25	10.50
17.85	51.47	184.48	692.57	3,204.82	7.62	17.373	4.627	15.14	9.20
21 x 12 x 40.8	108.80	344.70	751.97	5,199.85	8.50	15.085	6.915	32.00	21.00
35.7	95.57	308.22	738.73	4,784.58	8.38	15.523	6.477	28.11	18.37
30.6	82.24	270.03	724.20	4,327.23	8.21	16.025	5.975	24.19	15.75
25.5	68.80	230.06	707.73	3,819.69	7.96	16.603	5.397	20.23	13.12
20.4	55.25	188.22	688.09	3,251.42	7.60	17.275	4.725	16.25	10.50
17.85	48.49	166.74	676.45	2,942.89	7.36	17.649	4.351	14.26	9.20
21 x 10 x 40.8	102.00	307.20	732.83	4,762.08	8.25	15.502	6.498	30.00	21.00
35.7	89.62	274.84	719.82	4,375.70	8.12	15.921	6.079	26.36	18.37
30.6	77.14	240.92	705.44	3,950.99	7.94	16.399	5.601	22.69	15.75
25.5	64.55	205.39	689.03	3,480.90	7.68	16.948	5.052	18.98	13.12
20.4	51.85	168.14	669.28	2,956.31	7.31	17.583	4.417	15.25	10.50
17.85	45.51	149.00	657.49	2,672.36	7.08	17.935	4.065	13.39	9.20
21 x 8 x 40.8	95.20	269.62	709.69	4,298.57	7.95	15.943	6.057	28.00	21.00
35.7	83.67	241.40	697.00	3,944.67	7.81	16.340	5.660	24.61	18.37
30.6	72.04	211.78	682.87	3,556.31	7.62	16.792	5.208	21.19	15.75
25.5	60.30	180.69	666.59	3,127.44	7.36	17.308	4.692	17.73	13.12
20.4	48.45	148.04	646.79	2,650.32	6.99	17.902	4.098	14.25	10.50
17.85	42.53	131.25	634.87	2,392.81	6.75	18.231	3.769	12.51	9.20
21 x 6 x 40.8	88.40	231.98	681.15	3,806.98	7.59	16.411	5.589	26.00	21.00
35.7	77.72	207.93	668.93	3,489.65	7.45	16.783	5.217	22.86	18.37
30.6	66.94	182.61	655.18	3,141.80	7.26	17.205	4.795	19.69	15.75
25.5	56.05	155.98	639.16	2,758.34	6.99	17.684	4.316	16.48	13.12
20.4	45.05	127.94	619.43	2,332.85	6.62	18.234	3.766	13.25	10.50
17.85	39.56	113.49	607.43	2,103.77	6.38	18.537	3.463	11.63	9.20
18 x 18 x 40.8	119.00	377.76	668.77	4,586.62	7.82	12.142	6.858	35.00	18.00
35.7	104.50	337.63	658.41	4,240.49	7.74	12.560	6.440	30.73	15.75
30.6	89.89	295.62	646.93	3,855.11	7.62	13.041	5.959	26.44	13.50
25.5	75.17	251.65	633.75	3,422.38	7.42	13.600	5.400	22.11	11.25
20.4	60.35	205.66	617.79	2,931.64	7.12	14.255	4.745	17.75	9.00
15.3	45.42	157.59	596.63	2,368.58	6.66	15.030	3.970	13.36	6.75
18 x 16 x 40.8	112.20	345.73	658.77	4,307.97	7.68	12.461	6.539	33.00	18.00
35.7	98.55	309.06	648.41	3,976.71	7.59	12.867	6.133	28.98	15.75
30.6	84.79	270.66	636.87	3,608.85	7.45	13.333	5.667	24.94	13.50
25.5	70.92	230.46	623.55	3,197.12	7.25	13.873	5.127	20.86	11.25
20.4	56.95	188.40	607.30	2,732.03	6.94	14.501	4.499	16.75	9.00
15.3	42.87	144.41	585.63	2,200.99	6.47	15.242	3.758	12.61	6.75
18 x 14 x 40.8	105.40	313.63	647.10	4,013.63	7.52	12.798	6.202	31.00	18.00
35.7	92.60	280.44	636.75	3,699.19	7.42	13.191	5.809	27.23	15.75
30.6	79.69	245.67	625.16	3,350.94	7.27	13.640	5.360	23.44	13.50



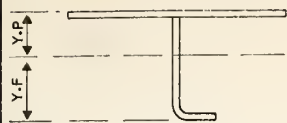
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 25.5	66.67	209.25	611.69	2,962.41	7.05	14.157	4.843	19.61	11.25
20.4	53.55	171.12	595.16	2,525.27	6.73	14.757	4.243	15.75	9.00
15.3	40.32	131.22	572.94	2,028.55	6.25	15.459	3.541	11.86	6.75
18 x 12 x 40.8	98.60	281.45	633.29	3,702.24	7.33	13.154	5.846	29.00	18.00
35.7	86.65	251.77	622.98	3,406.86	7.21	13.531	5.469	25.48	15.75
30.6	74.59	220.65	611.35	3,080.54	7.05	13.961	5.039	21.94	13.50
25.5	62.42	188.03	597.76	2,717.65	6.82	14.454	4.546	18.36	11.25
20.4	50.15	153.84	580.93	2,310.95	6.50	15.022	3.978	14.75	9.00
15.3	37.77	118.03	558.13	1,851.05	6.02	15.684	3.316	11.11	6.75
18 x 10 x 40.8	91.80	249.21	616.70	3,372.27	7.09	13.532	5.468	27.00	18.00
35.7	80.70	223.06	606.46	3,098.47	6.97	13.891	5.109	23.73	15.75
30.6	69.49	195.60	594.83	2,796.72	6.80	14.298	4.702	20.44	13.50
25.5	58.17	166.78	581.13	2,462.17	6.57	14.763	4.237	17.11	11.25
20.4	46.75	136.54	564.01	2,088.66	6.23	15.297	3.703	13.75	9.00
15.3	35.22	104.83	540.64	1,668.27	5.76	15.914	3.086	10.36	6.75
18 x 8 x 40.8	85.00	216.90	596.37	3,022.00	6.82	13.933	5.067	25.00	18.00
35.7	74.75	194.29	586.28	2,772.68	6.69	14.271	4.729	21.98	15.75
30.6	64.39	170.51	574.71	2,498.47	6.51	14.653	4.347	18.94	13.50
25.5	53.92	145.51	560.94	2,195.27	6.27	15.086	3.914	15.86	11.25
20.4	43.35	119.24	543.58	1,857.94	5.93	15.582	3.418	12.75	9.00
15.3	32.67	91.63	519.66	1,479.96	5.46	16.152	2.848	9.61	6.75
18 x 6 x 40.8	78.20	184.52	570.91	2,649.50	6.49	14.359	4.641	23.00	18.00
35.7	68.80	165.48	561.07	2,427.96	6.35	14.673	4.327	20.23	15.75
30.6	59.29	145.39	549.67	2,184.63	6.17	15.026	3.974	17.44	13.50
25.5	49.67	124.23	535.93	1,916.14	5.92	15.425	3.575	14.61	11.25
20.4	39.95	101.92	518.41	1,618.30	5.59	15.878	3.122	11.75	9.00
15.3	30.12	78.42	494.01	1,285.86	5.13	16.397	2.603	8.86	6.75



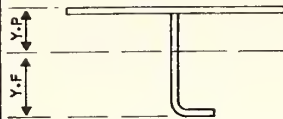
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,055.99	1,516.69	19,376.76	13.30	18.349	12.776	59.00	30.00
35.7	175.90	940.67	1,487.92	17,937.96	13.24	19.069	12.056	51.73	26.25
30.6	151.09	821.07	1,457.74	16,347.82	13.12	19.910	11.215	44.44	22.50
25.5	126.17	696.96	1,425.44	14,569.36	12.89	20.904	10.221	37.11	18.75
20.4	101.15	568.13	1,389.68	12,551.75	12.50	22.093	9.032	29.75	15.00
17.85	88.70	502.41	1,369.85	11,441.21	12.21	22.773	8.352	26.09	13.14
30 x 27 x 40.8	190.40	975.71	1,498.68	18,393.82	13.14	18.852	12.273	56.00	30.00
35.7	166.97	869.26	1,470.15	17,002.55	13.06	19.560	11.565	49.11	26.25
30.6	143.44	758.83	1,440.13	15,468.21	12.91	20.384	10.741	42.19	22.50
25.5	119.80	644.24	1,407.91	13,756.91	12.66	21.354	9.771	35.23	18.75
20.4	96.05	525.24	1,372.06	11,822.44	12.24	22.508	8.617	28.25	15.00
17.85	84.23	464.52	1,352.08	10,761.14	11.95	23.166	7.959	24.77	13.14
30 x 24 x 40.8	180.20	895.31	1,477.95	17,353.96	12.94	19.383	11.742	53.00	30.00
35.7	158.05	797.76	1,449.71	16,016.56	12.84	20.077	11.048	46.48	26.25
30.6	135.79	696.55	1,419.91	14,544.89	12.67	20.881	10.244	39.94	22.50
25.5	113.42	591.47	1,387.79	12,908.18	12.40	21.824	9.301	33.36	18.75
20.4	90.95	482.34	1,351.86	11,064.84	11.96	22.940	8.185	26.75	15.00
17.85	79.76	426.63	1,331.72	10,056.93	11.65	23.573	7.552	23.46	13.14
30 x 21 x 40.8	170.00	814.80	1,453.83	16,252.10	12.71	19.946	11.179	50.00	30.00
35.7	149.12	726.18	1,425.94	14,975.78	12.59	20.623	10.502	43.86	26.25
30.6	128.14	634.20	1,396.42	13,574.51	12.40	21.404	9.721	37.69	22.50
25.5	107.05	538.68	1,364.45	12,020.67	12.10	22.315	8.810	31.48	18.75
20.4	85.85	439.41	1,328.47	10,277.27	11.64	23.389	7.736	25.25	15.00
17.85	75.30	388.72	1,308.18	9,327.28	11.32	23.995	7.130	22.15	13.14
30 x 18 x 40.8	159.80	734.16	1,425.42	15,082.51	12.43	20.544	10.581	47.00	30.00
35.7	140.20	654.52	1,397.98	13,875.52	12.29	21.200	9.925	41.23	26.25
30.6	120.49	571.80	1,368.81	12,553.39	12.08	21.954	9.171	35.44	22.50
25.5	100.67	485.85	1,337.06	11,091.67	11.76	22.829	8.296	29.61	18.75
20.4	80.75	396.47	1,301.07	9,457.93	11.28	23.856	7.269	23.75	15.00
17.85	70.83	350.80	1,280.63	8,570.80	10.95	24.432	6.693	20.83	13.14
30 x 15 x 40.8	149.60	653.40	1,391.47	13,838.76	12.09	21.180	9.945	44.00	30.00
35.7	131.27	582.77	1,364.60	12,710.51	11.94	21.811	9.314	38.61	26.25
30.6	112.84	509.35	1,335.90	11,477.43	11.70	22.533	8.592	33.19	22.50
25.5	94.30	432.99	1,304.47	10,118.21	11.37	23.368	7.757	27.73	18.75
20.4	75.65	353.50	1,268.53	8,604.85	10.87	24.342	6.783	22.25	15.00
17.85	66.36	312.86	1,247.98	7,785.96	10.54	24.886	6.239	19.52	13.14
30 x 12 x 40.8	139.40	572.52	1,350.17	12,513.56	11.69	21.857	9.268	41.00	30.00
35.7	122.35	510.94	1,324.05	11,474.87	11.51	22.458	8.667	35.98	26.25
30.6	105.19	446.84	1,295.99	10,342.10	11.26	23.145	7.980	30.94	22.50
25.5	87.92	380.09	1,265.02	9,097.00	10.91	23.934	7.191	25.86	18.75
20.4	70.55	310.52	1,229.26	7,715.91	10.40	24.848	6.277	20.75	15.00
17.85	61.89	274.92	1,208.63	6,971.14	10.07	25.357	5.768	18.20	13.14
30 x 9 x 40.8	129.20	491.53	1,298.84	11,098.63	11.19	22.580	8.545	38.00	30.00
35.7	113.42	439.02	1,273.75	10,161.98	11.00	23.147	7.978	33.36	26.25
30.6	97.54	384.28	1,246.58	9,142.33	10.74	23.791	7.334	28.69	22.50
25.5	81.55	327.16	1,216.31	8,024.45	10.37	24.528	6.597	23.98	18.75
20.4	65.45	267.52	1,180.94	6,788.78	9.86	25.376	5.749	19.25	15.00
17.85	57.43	236.96	1,160.32	6,124.60	9.53	25.847	5.278	16.89	13.14
30 x 6 x 40.8	119.00	410.41	1,233.35	9,584.55	10.58	23.354	7.771	35.00	30.00
35.7	104.50	367.02	1,209.70	8,764.35	10.38	23.880	7.245	30.73	26.25
30.6	89.89	321.65	1,183.83	7,872.49	10.11	24.475	6.650	26.44	22.50
25.5	75.17	274.20	1,154.65	6,896.59	9.74	25.152	5.973	22.11	18.75
20.4	60.35	224.51	1,120.02	5,820.97	9.23	25.928	5.197	17.75	15.00
17.85	52.96	198.99	1,099.58	5,244.44	8.90	26.356	4.769	15.58	13.14
27 x 27 x 40.8	180.20	859.12	1,333.91	14,696.95	11.91	17.107	11.018	53.00	27.00
35.7	158.05	765.40	1,310.38	13,589.34	11.83	17.755	10.370	46.48	23.62



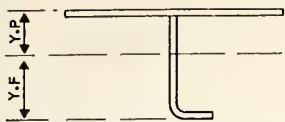
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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45.9 # PLATE WEIGHT

STEEL

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	668.12	1,285.37	12,364.16	11.69	18.506	9.619	39.94	20.25
25.5	113.42	567.12	1,258.11	10,994.36	11.44	19.386	8.739	33.36	16.87
20.4	90.95	462.24	1,227.17	9,443.42	11.05	20.430	7.695	26.75	13.50
17.85	79.76	408.72	1,209.59	8,592.06	10.77	21.022	7.103	23.46	11.83
27 x 24 x 40.8	170.00	786.53	1,315.69	13,844.65	11.73	17.602	10.523	50.00	27.00
35.7	149.12	700.83	1,292.32	12,780.12	11.63	18.236	9.889	43.86	23.62
30.6	128.14	611.85	1,267.39	11,605.56	11.47	18.968	9.157	37.69	20.25
25.5	107.05	519.45	1,240.09	10,296.58	11.20	19.822	8.303	31.48	16.87
20.4	85.85	423.47	1,208.92	8,820.48	10.78	20.829	7.296	25.25	13.50
17.85	75.30	374.49	1,191.10	8,013.13	10.50	21.397	6.728	22.15	11.83
27 x 21 x 40.8	159.80	713.81	1,294.38	12,939.97	11.51	18.128	9.997	47.00	27.00
35.7	140.20	636.17	1,271.21	11,924.64	11.40	18.744	9.381	41.23	23.62
30.6	120.49	555.53	1,246.39	10,807.30	11.21	19.454	8.671	35.44	20.25
25.5	100.67	471.75	1,219.09	9,566.18	10.92	20.278	7.847	29.61	16.87
20.4	80.75	384.69	1,187.67	8,172.40	10.48	21.244	6.881	23.75	13.50
17.85	70.83	340.24	1,169.61	7,412.91	10.19	21.787	6.338	20.83	11.83
27 x 18 x 40.8	149.60	640.98	1,269.11	11,977.92	11.25	18.687	9.438	44.00	27.00
35.7	131.27	571.42	1,246.22	11,018.83	11.11	19.283	8.842	38.61	23.62
30.6	112.84	499.15	1,221.57	9,966.17	10.91	19.966	8.159	33.19	20.25
25.5	94.30	424.02	1,194.28	8,800.81	10.60	20.756	7.369	27.73	16.87
20.4	75.65	345.89	1,162.65	7,497.64	10.14	21.676	6.449	22.25	13.50
17.85	66.36	305.98	1,144.33	6,790.18	9.84	22.191	5.934	19.52	11.83
27 x 15 x 40.8	139.40	568.02	1,238.68	10,952.87	10.93	19.283	8.842	41.00	27.00
35.7	122.35	506.59	1,216.14	10,058.10	10.78	19.855	8.270	35.98	23.62
30.6	105.19	442.71	1,191.75	9,078.63	10.55	20.507	7.618	30.94	20.25
25.5	87.92	376.24	1,164.55	7,997.91	10.23	21.257	6.868	25.86	16.87
20.4	70.55	307.07	1,132.74	6,794.50	9.76	22.127	5.998	20.75	13.50
17.85	61.89	271.71	1,114.17	6,143.67	9.45	22.611	5.514	18.20	11.83
27 x 12 x 40.8	129.20	494.94	1,201.31	9,858.43	10.55	19.919	8.206	38.00	27.00
35.7	113.42	441.67	1,179.28	9,037.31	10.37	20.462	7.663	33.36	23.62
30.6	97.54	386.21	1,155.27	8,140.71	10.13	21.078	7.047	28.69	20.25
25.5	81.55	328.44	1,128.27	7,154.64	9.79	21.784	6.341	23.98	16.87
20.4	65.45	268.23	1,096.35	6,061.17	9.32	22.597	5.528	19.25	13.50
17.85	57.43	237.43	1,077.55	5,471.99	9.00	23.047	5.078	16.89	11.83
27 x 9 x 40.8	119.00	421.73	1,154.33	8,687.28	10.07	20.599	7.526	35.00	27.00
35.7	104.50	376.67	1,133.03	7,950.65	9.89	21.108	7.017	30.73	23.62
30.6	89.89	329.66	1,109.61	7,148.02	9.63	21.683	6.442	26.44	20.25
25.5	75.17	280.60	1,082.99	6,267.89	9.28	22.337	5.788	22.11	16.87
20.4	60.35	229.38	1,051.12	5,295.65	8.80	23.087	5.038	17.75	13.50
17.85	52.96	203.13	1,032.16	4,773.64	8.49	23.500	4.625	15.58	11.83
27 x 6 x 40.8	108.80	348.40	1,093.47	7,431.09	9.48	21.329	6.796	32.00	27.00
35.7	95.57	311.58	1,073.28	6,791.51	9.29	21.797	6.328	28.11	23.62
30.6	82.24	273.05	1,050.81	6,095.60	9.03	22.324	5.801	24.19	20.25
25.5	68.80	232.73	1,024.91	5,334.19	8.68	22.920	5.205	20.23	16.87
20.4	55.25	190.50	993.40	4,495.78	8.20	23.599	4.526	16.25	13.50
17.85	48.49	168.82	974.41	4,046.99	7.90	23.972	4.153	14.26	11.83
24 x 24 x 40.8	159.80	681.54	1,155.61	10,771.20	10.51	15.804	9.321	47.00	24.00
35.7	140.20	607.35	1,136.64	9,945.50	10.41	16.375	8.750	41.23	21.00
30.6	120.49	530.26	1,116.10	9,031.76	10.25	17.033	8.092	35.44	18.00
25.5	100.67	450.15	1,093.16	8,011.08	9.99	17.797	7.328	29.61	15.00
20.4	80.75	366.90	1,066.29	6,858.48	9.60	18.693	6.432	23.75	12.00
17.85	70.83	324.42	1,050.56	6,227.82	9.34	19.197	5.928	20.83	10.51
24 x 22 x 40.8	153.00	638.34	1,143.56	10,292.79	10.38	16.124	9.001	45.00	24.00
35.7	134.25	568.92	1,124.64	9,492.24	10.27	16.685	8.440	39.48	21.00
30.6	115.39	496.76	1,104.07	8,608.08	10.09	17.328	7.797	33.94	18.00
25.5	96.42	421.77	1,081.02	7,622.88	9.83	18.073	7.052	28.36	15.00



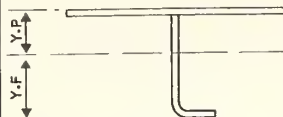
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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45.9 # PLATE WEIGHT

STEEL

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 22 x 20.4	77.35	343.83	1,053.88	6,513.68	9.42	18.944	6.181	22.75	12.00
17.85	67.85	304.05	1,037.93	5,908.39	9.15	19.433	5.692	19.96	10.51
24 x 20 x 40.8	146.20	595.08	1,130.05	9,793.95	10.23	16.458	8.667	43.00	24.00
35.7	128.30	530.44	1,111.18	9,021.03	10.11	17.007	8.118	37.73	21.00
30.6	110.29	463.24	1,090.60	8,169.10	9.92	17.635	7.490	32.44	18.00
25.5	92.17	393.38	1,067.44	7,222.18	9.64	18.359	6.766	27.11	15.00
20.4	73.95	320.75	1,040.03	6,159.35	9.23	19.203	5.922	21.75	12.00
17.85	64.87	283.67	1,023.85	5,580.93	8.95	19.674	5.451	19.08	10.51
24 x 18 x 40.8	139.40	551.77	1,114.80	9,273.34	10.06	16.807	8.318	41.00	24.00
35.7	122.35	491.93	1,096.00	8,530.77	9.93	17.341	7.784	35.98	21.00
30.6	105.19	429.70	1,075.43	7,713.97	9.73	17.952	7.173	30.94	18.00
25.5	87.92	364.98	1,052.17	6,808.38	9.44	18.654	6.471	25.86	15.00
20.4	70.55	297.67	1,024.47	5,795.09	9.01	19.468	5.657	20.75	12.00
17.85	61.89	263.29	1,008.05	5,245.13	8.73	19.922	5.203	18.20	10.51
24 x 16 x 40.8	132.60	508.40	1,097.44	8,729.49	9.87	17.171	7.954	39.00	24.00
35.7	116.40	453.37	1,078.75	8,020.29	9.72	17.690	7.435	34.23	21.00
30.6	100.09	396.13	1,058.20	7,241.78	9.51	18.281	6.844	29.44	18.00
25.5	83.67	336.56	1,034.84	6,380.83	9.21	18.959	6.166	24.61	15.00
20.4	67.15	274.57	1,006.87	5,420.48	8.78	19.742	5.383	19.75	12.00
17.85	58.92	242.90	990.21	4,900.66	8.49	20.176	4.949	17.33	10.51
24 x 14 x 40.8	125.80	464.97	1,077.51	8,160.81	9.65	17.551	7.574	37.00	24.00
35.7	110.45	414.78	1,058.95	7,488.31	9.49	18.054	7.071	32.48	21.00
30.6	94.99	362.53	1,038.46	6,751.57	9.27	18.623	6.502	27.94	18.00
25.5	79.42	308.12	1,015.04	5,938.83	8.96	19.274	5.851	23.36	15.00
20.4	63.75	251.47	986.80	5,035.06	8.52	20.023	5.102	18.75	12.00
17.85	55.94	222.50	969.88	4,547.20	8.24	20.437	4.688	16.45	10.51
24 x 12 x 40.8	119.00	421.49	1,054.38	7,565.57	9.40	17.950	7.175	35.00	24.00
35.7	104.50	376.15	1,036.02	6,933.44	9.23	18.433	6.692	30.73	21.00
30.6	89.89	328.91	1,015.63	6,242.26	9.00	18.979	6.146	26.44	18.00
25.5	75.17	279.67	992.18	5,481.63	8.68	19.600	5.525	22.11	15.00
20.4	60.35	228.36	963.69	4,638.36	8.24	20.312	4.813	17.75	12.00
17.85	52.96	202.10	946.53	4,184.38	7.95	20.704	4.421	15.58	10.51
24 x 10 x 40.8	112.20	377.95	1,027.22	6,941.86	9.11	18.367	6.758	33.00	24.00
35.7	98.55	337.48	1,009.13	6,354.17	8.94	18.828	6.297	28.98	21.00
30.6	84.79	295.26	988.91	5,712.73	8.70	19.348	5.777	24.94	18.00
25.5	70.92	251.21	965.49	5,008.44	8.37	19.938	5.187	20.86	15.00
20.4	56.95	205.24	936.80	4,229.89	7.92	20.610	4.515	16.75	12.00
17.85	49.98	181.70	919.41	3,811.83	7.64	20.979	4.146	14.70	10.51
24 x 8 x 40.8	105.40	334.36	994.87	6,287.58	8.78	18.805	6.320	31.00	24.00
35.7	92.60	298.77	977.17	5,748.87	8.59	19.242	5.883	27.23	21.00
30.6	79.69	261.58	957.23	5,161.74	8.35	19.733	5.392	23.44	18.00
25.5	66.67	222.72	933.93	4,518.40	8.02	20.287	4.838	19.61	15.00
20.4	53.55	182.11	905.12	3,809.10	7.58	20.917	4.208	15.75	12.00
17.85	47.00	161.29	887.53	3,429.14	7.30	21.261	3.864	13.82	10.51
24 x 6 x 40.8	98.60	290.71	955.69	5,600.43	8.39	19.265	5.860	29.00	24.00
35.7	86.65	260.02	938.55	5,115.72	8.20	19.674	5.451	25.48	21.00
30.6	74.59	227.88	919.05	4,587.97	7.95	20.133	4.992	21.94	18.00
25.5	62.42	194.23	896.02	4,010.59	7.63	20.649	4.476	18.36	15.00
20.4	50.15	158.97	867.24	3,375.43	7.19	21.233	3.892	14.75	12.00
17.85	44.02	140.87	849.53	3,035.91	6.91	21.551	3.574	12.95	10.51
21 x 20 x 40.8	136.00	504.60	975.61	7,358.42	9.01	14.583	7.542	40.00	21.00
35.7	119.37	449.91	960.49	6,778.91	8.89	15.067	7.058	35.11	18.37
30.6	102.64	392.98	943.64	6,138.37	8.72	15.620	6.505	30.19	15.75
25.5	85.80	333.74	924.18	5,424.94	8.46	16.255	5.870	25.23	13.12
20.4	68.85	272.11	900.41	4,623.30	8.08	16.990	5.135	20.25	10.50
17.85	60.40	240.64	886.02	4,186.98	7.83	17.399	4.726	17.77	9.20

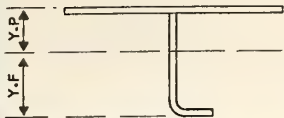


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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45.9 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	466.60	962.38	6,952.66	8.86	14.901	7.224	38.00	21.00
35.7	113.42	416.10	947.23	6,396.44	8.73	15.372	6.753	33.36	18.37
30.6	97.54	363.52	930.27	5,783.09	8.54	15.908	6.217	28.69	15.75
25.5	81.55	308.79	910.60	5,101.87	8.27	16.522	5.603	23.98	13.12
20.4	65.45	251.83	886.42	4,339.03	7.88	17.230	4.895	19.25	10.50
17.85	57.43	222.73	871.72	3,925.04	7.63	17.622	4.503	16.89	9.20
21 x 16 x 40.8	122.40	428.55	947.22	6,528.17	8.68	15.233	6.892	36.00	21.00
35.7	107.47	382.26	932.06	5,997.69	8.54	15.690	6.435	31.61	18.37
30.6	92.44	334.04	915.01	5,414.10	8.34	16.208	5.917	27.19	15.75
25.5	77.30	283.82	895.11	4,767.79	8.06	16.799	5.326	22.73	13.12
20.4	62.05	231.54	870.52	4,046.50	7.67	17.477	4.648	18.25	10.50
17.85	54.45	204.82	855.50	3,656.22	7.41	17.851	4.274	16.01	9.20
21 x 14 x 40.8	115.60	390.44	929.71	6,083.61	8.48	15.581	6.544	34.00	21.00
35.7	101.52	348.37	914.54	5,581.60	8.33	16.022	6.103	29.86	18.37
30.6	87.34	304.53	897.41	5,030.61	8.12	16.519	5.606	25.69	15.75
25.5	73.05	258.84	877.30	4,422.12	7.83	17.084	5.041	21.48	13.12
20.4	58.65	211.24	852.29	3,745.35	7.43	17.731	4.394	17.25	10.50
17.85	51.47	186.90	836.94	3,380.23	7.17	18.086	4.039	15.14	9.20
21 x 12 x 40.8	108.80	352.27	909.22	5,617.53	8.25	15.947	6.178	32.00	21.00
35.7	95.57	314.45	894.10	5,147.01	8.09	16.368	5.757	28.11	18.37
30.6	82.24	274.99	876.91	4,631.74	7.87	16.843	5.282	24.19	15.75
25.5	68.80	233.84	856.60	4,064.25	7.57	17.380	4.745	20.23	13.12
20.4	55.25	190.93	831.16	3,435.19	7.17	17.992	4.133	16.25	10.50
17.85	48.49	168.97	815.48	3,096.79	6.91	18.327	3.798	14.26	9.20
21 x 10 x 40.8	102.00	314.05	884.94	5,128.33	7.98	16.330	5.795	30.00	21.00
35.7	89.62	280.48	869.92	4,692.67	7.81	16.731	5.394	26.36	18.37
30.6	77.14	245.43	852.72	4,216.55	7.59	17.180	4.945	22.69	15.75
25.5	64.55	208.83	832.25	3,693.53	7.29	17.687	4.438	18.98	13.12
20.4	51.85	170.61	806.41	3,115.61	6.88	18.261	3.864	15.25	10.50
17.85	45.51	151.04	790.40	2,805.59	6.62	18.575	3.550	13.39	9.20
21 x 8 x 40.8	95.20	275.76	855.70	4,614.24	7.66	16.733	5.392	28.00	21.00
35.7	83.67	246.48	840.87	4,217.18	7.49	17.110	5.015	24.61	18.37
30.6	72.04	215.84	823.74	3,784.01	7.26	17.531	4.594	21.19	15.75
25.5	60.30	183.80	803.17	3,309.25	6.96	18.005	4.120	17.73	13.12
20.4	48.45	150.29	777.00	2,786.18	6.55	18.539	3.586	14.25	10.50
17.85	42.53	133.10	760.69	2,506.30	6.30	18.830	3.295	12.51	9.20
21 x 6 x 40.8	88.40	237.42	819.83	4,073.31	7.29	17.156	4.969	26.00	21.00
35.7	77.72	212.43	805.32	3,719.05	7.12	17.507	4.618	22.86	18.37
30.6	66.94	186.23	788.40	3,333.01	6.89	17.897	4.228	19.69	15.75
25.5	56.05	158.75	767.87	2,910.65	6.59	18.334	3.791	16.48	13.12
20.4	45.05	129.95	741.48	2,446.42	6.19	18.826	3.299	13.25	10.50
17.85	39.56	115.16	724.93	2,198.59	5.94	19.092	3.033	11.63	9.20
18 x 18 x 40.8	119.00	385.58	811.72	4,999.41	7.64	12.966	6.159	35.00	18.00
35.7	104.50	344.03	799.76	4,600.56	7.52	13.373	5.752	30.73	15.75
30.6	89.89	300.68	785.99	4,159.40	7.35	13.833	5.292	26.44	13.50
25.5	75.17	255.50	769.47	3,668.34	7.10	14.358	4.767	22.11	11.25
20.4	60.35	208.42	748.44	3,117.80	6.75	14.959	4.166	17.75	9.00
15.3	45.42	159.40	719.06	2,495.41	6.25	15.655	3.470	13.36	6.75
18 x 16 x 40.8	112.20	352.91	798.70	4,681.01	7.48	13.264	5.861	33.00	18.00
35.7	98.55	314.94	786.62	4,301.21	7.35	13.657	5.468	28.98	15.75
30.6	84.79	275.33	772.64	3,882.25	7.17	14.100	5.025	24.94	13.50
25.5	70.92	234.02	755.79	3,417.40	6.92	14.603	4.522	20.86	11.25
20.4	56.95	190.95	734.22	2,898.21	6.56	15.178	3.947	16.75	9.00
15.3	42.87	146.09	703.97	2,313.85	6.05	15.838	3.287	12.61	6.75
18 x 14 x 40.8	105.40	320.17	783.53	4,347.01	7.30	13.577	5.548	31.00	18.00
35.7	92.60	285.82	771.34	3,988.40	7.16	13.954	5.171	27.23	15.75
30.6	79.69	249.95	757.15	3,593.88	6.97	14.378	4.747	23.44	13.50



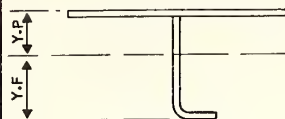
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 25.5	66.67	212.52	739.95	3,157.53	6.71	14.858	4.267	19.61	11.25
20.4	53.55	173.48	717.82	2,671.99	6.35	15.403	3.722	15.75	9.00
15.3	40.32	132.78	686.66	2,127.93	5.84	16.026	3.099	11.86	6.75
18 x 12 x 40.8	98.60	287.38	765.65	3,996.23	7.09	13.906	5.219	29.00	18.00
35.7	86.65	256.65	753.36	3,661.20	6.94	14.265	4.860	25.48	15.75
30.6	74.59	224.54	738.97	3,293.58	6.74	14.668	4.457	21.94	13.50
25.5	62.42	191.00	721.42	2,888.24	6.47	15.121	4.004	18.36	11.25
20.4	50.15	155.99	698.72	2,438.85	6.11	15.635	3.490	14.75	9.00
15.3	37.77	119.46	666.62	1,937.49	5.60	16.219	2.906	11.11	6.75
18 x 10 x 40.8	91.80	254.53	744.25	3,627.38	6.84	14.251	4.874	27.00	18.00
35.7	80.70	227.45	731.89	3,318.61	6.68	14.591	4.534	23.73	15.75
30.6	69.49	199.11	717.32	2,980.61	6.48	14.970	4.155	20.44	13.50
25.5	58.17	169.47	699.43	2,609.01	6.21	15.395	3.730	17.11	11.25
20.4	46.75	138.50	676.16	2,198.47	5.85	15.874	3.251	13.75	9.00
15.3	35.22	106.14	643.12	1,742.36	5.35	16.416	2.709	10.36	6.75
18 x 8 x 40.8	85.00	221.62	718.17	3,239.02	6.55	14.615	4.510	25.00	18.00
35.7	74.75	198.20	705.80	2,959.50	6.39	14.932	4.193	21.98	15.75
30.6	64.39	173.65	691.11	2,654.13	6.18	15.285	3.840	18.94	13.50
25.5	53.92	147.93	672.94	2,319.28	5.91	15.679	3.446	15.86	11.25
20.4	43.35	121.00	649.13	1,950.50	5.55	16.120	3.005	12.75	9.00
15.3	32.67	92.81	615.21	1,542.38	5.06	16.618	2.507	9.61	6.75
18 x 6 x 40.8	78.20	188.66	685.70	2,829.56	6.20	14.998	4.127	23.00	18.00
35.7	68.80	168.91	673.44	2,582.65	6.04	15.290	3.835	20.23	15.75
30.6	59.29	148.16	658.74	2,313.26	5.83	15.613	3.512	17.44	13.50
25.5	49.67	126.37	640.38	2,018.44	5.56	15.973	3.152	14.61	11.25
20.4	39.95	103.49	616.15	1,694.58	5.21	16.375	2.750	11.75	9.00
15.3	30.12	79.48	581.50	1,337.34	4.74	16.825	2.300	8.86	6.75



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

51.0 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,076.07	1,804.86	21,066.92	13.17	19.578	11.672	59.00	30.00
37.5	175.90	957.08	1,774.51	19,429.47	13.04	20.301	10.949	51.73	26.25
30.6	151.09	834.01	1,741.97	17,624.66	12.84	21.132	10.118	44.44	22.50
25.5	126.17	706.71	1,706.15	15,616.18	12.52	22.097	9.153	37.11	18.75
20.4	101.15	574.99	1,664.86	13,355.78	12.03	23.228	8.022	29.75	15.00
17.85	88.70	507.97	1,641.04	12,121.84	11.70	23.863	7.387	26.09	13.14
30 x 27 x 40.8	190.40	994.34	1,782.69	19,947.16	12.97	20.061	11.189	56.00	30.00
37.5	166.97	884.50	1,752.45	18,369.25	12.83	20.768	10.482	49.11	26.25
30.6	143.44	770.87	1,719.92	16,634.27	12.61	21.578	9.672	42.19	22.50
25.5	119.80	653.31	1,683.95	14,709.23	12.27	22.515	8.735	35.23	18.75
20.4	96.05	531.64	1,642.25	12,550.69	11.76	23.608	7.642	28.25	15.00
17.85	84.23	469.71	1,618.07	11,376.16	11.42	24.219	7.031	24.77	13.14
30 x 24 x 40.8	180.20	912.51	1,757.21	18,769.24	12.75	20.569	10.681	53.00	30.00
37.5	158.05	811.85	1,727.11	17,257.97	12.58	21.258	9.992	46.48	26.25
30.6	135.79	707.69	1,694.63	15,600.37	12.34	22.044	9.206	39.94	22.50
25.5	113.42	599.88	1,658.52	13,766.80	11.98	22.949	8.301	33.36	18.75
20.4	90.95	488.27	1,616.39	11,718.54	11.46	24.000	7.250	26.75	15.00
17.85	79.76	431.45	1,591.84	10,607.69	11.11	24.586	6.664	23.46	13.14
30 x 21 x 40.8	170.00	830.58	1,727.61	17,528.50	12.48	21.104	10.146	50.00	30.00
37.5	149.12	739.12	1,697.72	16,091.84	12.30	21.771	9.479	43.86	26.25
30.6	128.14	644.45	1,665.31	14,520.04	12.04	22.531	8.719	37.69	22.50
25.5	107.05	546.42	1,629.08	12,786.77	11.66	23.401	7.849	31.48	18.75
20.4	85.85	444.89	1,586.53	10,857.94	11.12	24.406	6.844	25.25	15.00
17.85	75.30	393.17	1,561.58	9,815.36	10.77	24.964	6.286	22.15	13.14
30 x 18 x 40.8	159.80	748.55	1,692.80	16,219.80	12.17	21.668	9.582	47.00	30.00
37.5	140.20	666.33	1,663.19	14,866.70	11.97	22.311	8.939	41.23	26.25
30.6	120.49	581.17	1,630.92	13,390.08	11.69	23.040	8.210	35.44	22.50
25.5	100.67	492.94	1,594.62	11,766.85	11.30	23.871	7.379	29.61	18.75
20.4	80.75	401.49	1,551.65	9,967.40	10.75	24.826	6.424	23.75	15.00
17.85	70.83	354.89	1,526.29	8,998.04	10.39	25.355	5.895	20.83	13.14
30 x 15 x 40.8	149.60	666.41	1,651.29	14,837.38	11.80	22.265	8.985	44.00	30.00
37.5	131.27	593.46	1,622.07	13,577.95	11.59	22.879	8.371	38.61	26.25
30.6	112.84	517.84	1,590.03	12,206.98	11.29	23.573	7.677	33.19	22.50
25.5	94.30	439.42	1,553.74	10,704.54	10.89	24.360	6.890	27.73	18.75
20.4	75.65	358.07	1,510.39	9,045.35	10.33	25.261	5.989	22.25	15.00
17.85	66.36	316.59	1,484.62	8,154.53	9.97	25.757	5.493	19.52	13.14
30 x 12 x 40.8	139.40	584.17	1,600.92	13,374.84	11.37	22.896	8.354	41.00	30.00
37.5	122.35	520.52	1,572.25	12,220.52	11.14	23.477	7.773	35.98	26.25
30.6	105.19	454.47	1,540.60	10,966.90	10.83	24.131	7.119	30.94	22.50
25.5	87.92	385.88	1,504.43	9,597.15	10.42	24.871	6.379	25.86	18.75
20.4	70.55	314.64	1,460.80	8,090.07	9.86	25.712	5.538	20.75	15.00
17.85	61.89	278.28	1,434.66	7,283.55	9.50	26.173	5.077	18.20	13.14
30 x 9 x 40.8	129.20	501.82	1,538.52	11,824.99	10.85	23.564	7.686	38.00	30.00
35.7	113.42	447.51	1,510.67	10,788.75	10.61	24.108	7.142	33.36	26.25
30.6	97.54	391.04	1,479.64	9,665.64	10.30	24.718	6.532	28.69	22.50
25.5	81.55	332.31	1,443.82	8,441.74	9.88	25.403	5.847	23.98	18.75
20.4	65.45	271.20	1,400.09	7,099.73	9.32	26.179	5.071	19.25	15.00
17.85	57.43	239.97	1,373.65	6,383.75	8.97	26.603	4.647	16.89	13.14
30 x 6 x 40.8	119.00	419.37	1,459.20	10,179.79	10.22	24.274	6.976	35.00	30.00
35.7	104.50	374.43	1,432.59	9,276.37	9.97	24.775	6.475	30.73	26.25
30.6	89.89	327.57	1,402.59	8,298.54	9.66	25.333	5.917	26.44	22.50
25.5	75.17	278.71	1,367.50	7,235.13	9.25	25.959	5.291	22.11	18.75
20.4	60.35	227.74	1,324.04	6,072.37	8.70	26.664	4.586	17.75	15.00
17.85	52.96	201.64	1,297.49	5,453.66	8.36	27.047	4.203	15.58	13.14
27 x 27 x 40.8	180.20	874.95	1,588.92	15,939.98	11.75	18.218	10.032	53.00	27.00
35.7	158.05	778.33	1,563.61	14,680.25	11.61	18.861	9.389	46.48	23.62



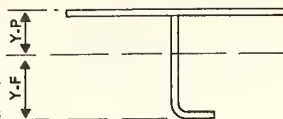
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	678.31	1,535.98	13,292.27	11.39	19.596	8.654	39.94	20.25
25.5	113.42	574.80	1,504.86	11,749.96	11.07	20.442	7.808	33.36	16.87
20.4	90.95	467.66	1,467.93	10,019.30	10.60	21.425	6.825	26.75	13.50
17.85	79.76	413.13	1,446.08	9,077.58	10.28	21.973	6.277	23.46	11.83
27 x 24 x 40.8	170.00	801.09	1,566.29	14,972.82	11.54	18.691	9.559	50.00	27.00
35.7	149.12	712.73	1,540.97	13,767.08	11.38	19.316	8.934	43.86	23.62
30.6	128.14	621.25	1,513.24	12,442.24	11.14	20.028	8.222	37.69	20.25
25.5	107.05	526.54	1,481.82	10,975.00	10.81	20.844	7.406	31.48	16.87
20.4	85.85	428.49	1,444.30	9,335.23	10.31	21.787	6.463	25.25	13.50
17.85	75.30	378.57	1,421.98	8,446.10	9.99	22.310	5.940	22.15	11.83
27 x 21 x 40.8	159.80	727.12	1,539.85	13,952.69	11.29	19.189	9.061	47.00	27.00
35.7	140.20	647.06	1,514.58	12,807.69	11.11	19.794	8.456	41.23	23.62
30.6	120.49	564.14	1,486.75	11,553.15	10.86	20.479	7.771	35.44	20.25
25.5	100.67	478.26	1,455.04	10,168.49	10.51	21.262	6.988	29.61	16.87
20.4	80.75	389.30	1,416.89	8,627.36	10.00	22.161	6.089	23.75	13.50
17.85	70.83	344.00	1,394.07	7,794.70	9.67	22.659	5.591	20.83	11.83
27 x 18 x 40.8	149.60	653.05	1,508.57	12,875.09	11.00	19.715	8.535	44.00	27.00
35.7	131.27	581.31	1,483.39	11,798.50	10.80	20.296	7.954	38.61	23.62
30.6	112.84	506.98	1,455.50	10,622.25	10.54	20.952	7.298	33.19	20.25
25.5	94.30	429.95	1,423.50	9,328.47	10.17	21.697	6.553	27.73	16.87
20.4	75.65	350.10	1,384.71	7,894.45	9.65	22.549	5.701	22.25	13.50
17.85	66.36	309.43	1,361.37	7,122.42	9.32	23.018	5.232	19.52	11.83
27 x 15 x 40.8	139.40	578.87	1,470.99	11,735.04	10.65	20.272	7.978	41.00	27.00
35.7	122.35	515.50	1,445.97	10,735.52	10.44	20.826	7.424	35.98	23.62
30.6	105.19	449.77	1,418.08	9,646.53	10.16	21.447	6.803	30.94	20.25
25.5	87.92	381.61	1,385.84	8,452.80	9.78	22.151	6.099	25.86	16.87
20.4	70.55	310.89	1,346.41	7,135.12	9.26	22.951	5.299	20.75	13.50
17.85	61.89	274.84	1,322.52	6,428.26	8.92	23.389	4.861	18.20	11.83
27 x 12 x 40.8	129.20	504.59	1,424.98	10,526.95	10.23	20.863	7.387	38.00	27.00
35.7	113.42	449.61	1,400.25	9,614.33	10.01	21.384	6.866	33.36	23.62
30.6	97.54	392.52	1,372.47	8,622.66	9.72	21.967	6.283	28.69	20.25
25.5	81.55	333.24	1,340.07	7,539.16	9.34	22.624	5.626	23.98	16.87
20.4	65.45	271.66	1,300.05	6,347.92	8.81	23.367	4.883	19.25	13.50
17.85	57.43	240.24	1,275.63	5,711.12	8.48	23.773	4.477	16.89	11.83
27 x 9 x 40.8	119.00	430.20	1,367.35	9,244.52	9.74	21.489	6.761	35.00	27.00
35.7	104.50	383.64	1,343.13	8,430.02	9.51	21.974	6.276	30.73	23.62
30.6	89.89	335.22	1,315.65	7,546.99	9.21	22.514	5.736	26.44	20.25
25.5	75.17	284.84	1,283.25	6,585.03	8.82	23.118	5.132	22.11	16.87
20.4	60.35	232.42	1,242.78	5,531.31	8.30	23.799	4.451	17.75	13.50
17.85	52.96	205.63	1,217.89	4,969.84	7.98	24.169	4.081	15.58	11.83
27 x 6 x 40.8	108.80	355.70	1,293.07	7,880.69	9.13	22.155	6.095	32.00	27.00
35.7	95.57	317.61	1,269.72	7,177.10	8.90	22.598	5.652	28.11	23.62
30.6	82.24	277.87	1,242.90	6,415.49	8.60	23.088	5.162	24.19	20.25
25.5	68.80	236.41	1,210.85	5,587.65	8.22	23.635	4.615	20.23	16.87
20.4	55.25	193.15	1,170.26	4,683.58	7.71	24.248	4.002	16.25	13.50
17.85	48.49	171.01	1,145.05	4,203.19	7.40	24.579	3.671	14.26	11.83
24 x 24 x 40.8	159.80	693.72	1,377.19	11,648.72	10.31	16.792	8.458	47.00	24.00
35.7	140.20	617.29	1,356.19	10,711.21	10.16	17.352	7.898	41.23	21.00
30.6	120.49	538.10	1,332.75	9,679.04	9.94	17.988	7.262	35.44	18.00
25.5	100.67	456.06	1,305.58	8,534.36	9.63	18.713	6.537	29.61	15.00
20.4	80.75	371.10	1,272.24	7,254.29	9.17	19.548	5.702	23.75	12.00
17.85	70.83	327.85	1,251.97	6,560.29	8.87	20.010	5.240	20.83	10.51
24 x 22 x 40.8	153.00	649.78	1,362.05	11,107.84	10.17	17.095	8.155	45.00	24.00
35.7	134.25	578.26	1,340.98	10,201.83	10.00	17.642	7.608	39.48	21.00
30.6	115.39	504.14	1,317.37	9,206.43	9.77	18.261	6.989	33.94	18.00
25.5	96.42	427.35	1,289.89	8,105.26	9.44	18.966	6.284	28.36	15.00



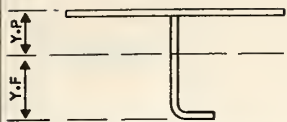
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 22 x 20.4	77.35	347.80	1,256.02	6,877.49	8.98	19.774	5.476	22.75	12.00
17.85	67.85	307.29	1,235.36	6,213.52	8.68	20.220	5.030	19.96	10.51
24 x 20 x 40.8	146.20	605.79	1,345.10	10,546.46	10.00	17.409	7.841	43.00	24.00
35.7	128.30	539.20	1,323.96	9,674.67	9.82	17.943	7.307	37.73	21.00
30.6	110.29	470.17	1,300.18	8,718.89	9.58	18.544	6.706	32.44	18.00
25.5	92.17	398.63	1,272.39	7,664.20	9.25	19.227	6.023	27.11	15.00
20.4	73.95	324.49	1,237.97	6,491.74	8.78	20.006	5.244	21.75	12.00
17.85	64.87	286.73	1,216.89	5,859.29	8.47	20.435	4.815	19.08	10.51
24 x 18 x 40.8	139.40	561.76	1,326.00	9,963.39	9.81	17.736	7.514	41.00	24.00
35.7	122.35	500.11	1,304.80	9,128.78	9.63	18.254	6.996	35.98	21.00
30.6	105.19	436.18	1,280.85	8,215.70	9.38	18.836	6.414	30.94	18.00
25.5	87.92	369.89	1,252.74	7,210.66	9.03	19.494	5.756	25.86	15.00
20.4	70.55	301.17	1,217.75	6,096.73	8.56	20.243	5.007	20.75	12.00
17.85	61.89	266.16	1,196.25	5,497.38	8.25	20.654	4.596	18.20	10.51
24 x 16 x 40.8	132.60	517.67	1,304.29	9,357.34	9.60	18.076	7.174	39.00	24.00
35.7	116.40	460.98	1,283.06	8,563.14	9.41	18.576	6.674	34.23	21.00
30.6	100.09	402.16	1,258.96	7,696.09	9.15	19.137	6.113	29.44	18.00
25.5	83.67	341.14	1,230.53	6,744.10	8.80	19.769	5.481	24.61	15.00
20.4	67.15	277.85	1,194.95	5,692.11	8.32	20.487	4.763	19.75	12.00
17.85	58.92	245.59	1,173.00	5,127.53	8.01	20.879	4.371	17.33	10.51
24 x 14 x 40.8	125.80	473.54	1,279.43	8,726.95	9.37	18.429	6.821	37.00	24.00
35.7	110.45	421.82	1,258.18	7,976.66	9.16	18.910	6.340	32.48	21.00
30.6	94.99	368.12	1,233.96	7,159.24	8.90	19.448	5.802	27.94	18.00
25.5	79.42	312.38	1,205.21	6,263.96	8.54	20.053	5.197	23.36	15.00
20.4	63.75	254.52	1,169.04	5,277.54	8.06	20.736	4.514	18.75	12.00
17.85	55.94	225.01	1,146.65	4,749.47	7.76	21.108	4.142	16.45	10.51
24 x 12 x 40.8	119.00	429.37	1,250.65	8,070.69	9.10	18.797	6.453	35.00	24.00
35.7	104.50	382.63	1,229.44	7,368.17	8.89	19.257	5.993	30.73	21.00
30.6	89.89	334.06	1,205.13	6,604.29	8.62	19.770	5.480	26.44	18.00
25.5	75.17	283.60	1,176.10	5,769.63	8.26	20.344	4.906	22.11	15.00
20.4	60.35	231.18	1,139.34	4,852.63	7.78	20.991	4.259	17.75	12.00
17.85	52.96	204.43	1,116.50	4,362.93	7.48	21.342	3.908	15.58	10.51
24 x 10 x 40.8	112.20	385.14	1,216.96	7,386.96	8.79	19.180	6.070	33.00	24.00
35.7	98.55	343.40	1,195.86	6,736.41	8.58	19.617	5.633	28.98	21.00
30.6	84.79	299.98	1,171.51	6,030.30	8.30	20.103	5.147	24.94	18.00
25.5	70.92	254.81	1,142.25	5,260.48	7.94	20.645	4.605	20.86	15.00
20.4	56.95	207.83	1,104.96	4,416.99	7.47	21.253	3.997	16.75	12.00
17.85	49.98	183.84	1,081.68	3,967.61	7.17	21.582	3.668	14.70	10.51
24 x 8 x 40.8	105.40	340.86	1,176.97	6,673.98	8.45	19.580	5.670	31.00	24.00
35.7	92.60	304.14	1,156.10	6,080.01	8.23	19.991	5.259	27.23	21.00
30.6	79.69	265.87	1,131.82	5,436.28	7.95	20.447	4.803	23.44	18.00
25.5	66.67	226.01	1,102.42	4,735.83	7.59	20.954	4.296	19.61	15.00
20.4	53.55	184.48	1,064.68	3,970.23	7.12	21.521	3.729	15.75	12.00
17.85	47.00	163.25	1,041.02	3,563.22	6.83	21.827	3.423	13.82	10.51
24 x 6 x 40.8	98.60	296.54	1,128.76	5,929.84	8.05	19.997	5.253	29.00	24.00
35.7	86.65	264.84	1,108.28	5,397.50	7.83	20.380	4.870	25.48	21.00
30.6	74.59	231.75	1,084.25	4,821.15	7.56	20.803	4.447	21.94	18.00
25.5	62.42	197.19	1,054.87	4,194.96	7.20	21.273	3.977	18.36	15.00
20.4	50.15	161.12	1,016.86	3,511.90	6.74	21.796	3.454	14.75	12.00
17.85	44.02	142.65	992.91	3,149.44	6.46	22.078	3.172	12.95	10.51
21 x 20 x 40.8	136.00	513.38	1,161.76	7,921.96	8.79	15.431	6.819	40.00	21.00
35.7	119.37	457.08	1,144.28	7,267.19	8.63	15.899	6.351	35.11	18.37
30.6	102.64	398.66	1,124.14	6,547.98	8.41	16.425	5.825	30.19	15.75
25.5	85.80	338.05	1,099.96	5,753.40	8.10	17.019	5.231	25.23	13.12
20.4	68.85	275.20	1,069.11	4,869.74	7.67	17.695	4.555	20.25	10.50
17.85	60.40	243.19	1,049.81	4,393.20	7.40	18.065	4.185	17.77	9.20



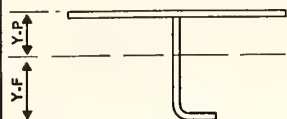
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	474.75	1,144.94	7,467.05	8.62	15.728	6.522	38.00	21.00
35.7	113.42	422.77	1,127.29	6,841.08	8.45	16.181	6.069	33.36	18.37
30.6	97.54	368.81	1,106.87	6,155.15	8.22	16.689	5.561	28.69	15.75
25.5	81.55	312.81	1,082.24	5,399.41	7.90	17.261	4.989	23.98	13.12
20.4	65.45	254.72	1,050.70	4,561.67	7.47	17.908	4.342	19.25	10.50
17.85	57.43	225.12	1,030.92	4,111.12	7.20	18.262	3.988	16.89	9.20
21 x 16 x 40.8	122.40	436.08	1,125.73	6,993.66	8.43	16.037	6.213	36.00	21.00
35.7	107.47	388.43	1,107.92	6,399.13	8.25	16.474	5.776	31.61	18.37
30.6	92.44	338.94	1,087.21	5,749.17	8.01	16.962	5.288	27.19	15.75
25.5	77.30	287.56	1,062.13	5,035.05	7.69	17.509	4.741	22.73	13.12
20.4	62.05	234.23	1,029.86	4,245.96	7.25	18.127	4.123	18.25	10.50
17.85	54.45	207.04	1,009.56	3,822.73	6.98	18.463	3.787	16.01	9.20
21 x 14 x 40.8	115.60	397.36	1,103.58	6,500.67	8.21	16.359	5.891	34.00	21.00
35.7	101.52	354.06	1,085.61	5,940.44	8.02	16.778	5.472	29.86	18.37
30.6	87.34	309.06	1,064.63	5,329.39	7.77	17.244	5.006	25.69	15.75
25.5	73.05	262.30	1,039.08	4,659.83	7.45	17.765	4.485	21.48	13.12
20.4	58.65	213.74	1,006.06	3,922.34	7.01	18.351	3.899	17.25	10.50
17.85	51.47	188.96	985.25	3,527.84	6.74	18.669	3.581	15.14	9.20
21 x 12 x 40.8	108.80	358.60	1,077.75	5,986.81	7.96	16.695	5.555	32.00	21.00
35.7	95.57	319.65	1,059.66	5,464.03	7.77	17.094	5.156	28.11	18.37
30.6	82.24	279.14	1,038.42	4,895.08	7.51	17.536	4.714	24.19	15.75
25.5	68.80	237.02	1,012.41	4,273.29	7.19	18.029	4.221	20.23	13.12
20.4	55.25	193.23	978.65	3,590.50	6.75	18.581	3.669	16.25	10.50
17.85	48.49	170.88	957.30	3,226.22	6.48	18.880	3.370	14.26	9.20
21 x 10 x 40.8	102.00	319.78	1,047.27	5,450.74	7.68	17.045	5.205	30.00	21.00
35.7	89.62	285.21	1,029.10	4,968.86	7.48	17.422	4.828	26.36	18.37
30.6	77.14	249.21	1,007.64	4,445.48	7.22	17.838	4.412	22.69	15.75
25.5	64.55	211.73	981.20	3,874.88	6.90	18.301	3.949	18.98	13.12
20.4	51.85	172.72	946.71	3,250.13	6.47	18.817	3.433	15.25	10.50
17.85	45.51	152.79	924.86	2,917.64	6.20	19.095	3.155	13.39	9.20
21 x 8 x 40.8	95.20	280.91	1,010.72	4,890.98	7.35	17.411	4.839	28.00	21.00
35.7	83.67	250.74	992.57	4,453.80	7.15	17.763	4.487	24.61	18.37
30.6	72.04	219.26	970.96	3,979.77	6.90	18.151	4.099	21.19	15.75
25.5	60.30	186.43	944.18	3,464.06	6.57	18.581	3.669	17.73	13.12
20.4	48.45	152.21	909.04	2,900.89	6.15	19.059	3.191	14.25	10.50
17.85	42.53	134.70	886.72	2,601.85	5.89	19.316	2.934	12.51	9.20
21 x 6 x 40.8	88.40	242.00	966.12	4,305.93	6.98	17.793	4.457	26.00	21.00
35.7	77.72	216.23	948.13	3,917.62	6.77	18.118	4.132	22.86	18.37
30.6	66.94	189.28	926.53	3,497.06	6.52	18.476	3.774	19.69	15.75
25.5	56.05	161.11	899.55	3,040.24	6.20	18.870	3.380	16.48	13.12
20.4	45.05	131.68	863.93	2,542.42	5.79	19.307	2.943	13.25	10.50
17.85	39.56	116.60	841.25	2,278.59	5.54	19.541	2.709	11.63	9.20
18 x 18 x 40.8	119.00	392.13	965.30	5,367.92	7.42	13.689	5.561	35.00	18.00
35.7	104.50	349.40	950.77	4,918.43	7.26	14.077	5.173	30.73	15.75
30.6	89.89	304.95	933.47	4,424.83	7.05	14.510	4.740	26.44	13.50
25.5	75.17	258.77	911.97	3,880.25	6.77	14.995	4.255	22.11	11.25
20.4	60.35	210.79	883.62	3,276.22	6.39	15.542	3.708	17.75	9.00
15.3	45.42	161.01	842.77	2,602.25	5.86	16.162	3.088	13.36	6.75
18 x 16 x 40.8	112.20	358.93	948.51	5,012.56	7.24	13.965	5.285	33.00	18.00
35.7	98.55	319.89	933.71	4,586.53	7.08	14.338	4.912	28.98	15.75
30.6	84.79	279.27	916.01	4,119.93	6.86	14.752	4.498	24.94	13.50
25.5	70.92	237.04	893.94	3,606.69	6.58	15.215	4.035	20.86	11.25
20.4	56.95	193.16	864.75	3,039.40	6.19	15.735	3.515	16.75	9.00
15.3	42.87	147.59	822.66	2,408.94	5.66	16.322	2.928	12.61	6.75
18 x 14 x 40.8	105.40	325.68	929.02	4,642.01	7.05	14.253	4.997	31.00	18.00
35.7	92.60	290.35	913.94	4,241.70	6.88	14.609	4.641	27.23	15.75



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

51.0 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 30.6	79.69	253.57	895.84	3,804.39	6.65	15.003	4.247	23.44	13.50
25.5	66.67	215.30	873.17	3,324.80	6.36	15.442	3.808	19.61	11.25
20.4	53.55	175.52	843.12	2,796.52	5.98	15.933	3.317	15.75	9.00
15.3	40.32	134.17	799.75	2,211.72	5.45	16.484	2.766	11.86	6.75
18 x 12 x 40.8	98.60	292.38	906.14	4,255.26	6.82	14.554	4.696	29.00	18.00
35.7	86.65	260.78	890.79	3,883.14	6.64	14.891	4.359	25.48	15.75
30.6	74.59	227.85	872.27	3,477.64	6.42	15.263	3.987	21.94	13.50
25.5	62.42	193.55	849.00	3,034.20	6.13	15.676	3.574	18.36	11.25
20.4	50.15	157.87	818.07	2,547.36	5.74	16.136	3.114	14.75	9.00
15.3	37.77	120.75	773.43	2,010.49	5.23	16.651	2.599	11.11	6.75
18 x 10 x 40.8	91.80	259.03	878.88	3,851.24	6.56	14.868	4.382	27.00	18.00
35.7	80.70	231.17	863.28	3,510.04	6.38	15.184	4.066	23.73	15.75
30.6	69.49	202.10	844.38	3,139.07	6.15	15.532	3.718	20.44	13.50
25.5	58.17	171.79	820.52	2,734.47	5.86	15.917	3.333	17.11	11.25
20.4	46.75	140.21	788.72	2,291.66	5.48	16.344	2.906	13.75	9.00
15.3	35.22	107.32	742.85	1,805.11	4.98	16.820	2.430	10.36	6.75
18 x 8 x 40.8	85.00	225.63	845.86	3,428.76	6.26	15.196	4.054	25.00	18.00
35.7	74.75	201.52	830.08	3,121.49	6.08	15.490	3.760	21.98	15.75
30.6	64.39	176.33	810.84	2,788.03	5.85	15.812	3.438	18.94	13.50
25.5	53.92	150.01	786.46	2,425.18	5.56	16.166	3.084	15.86	11.25
20.4	43.35	122.55	753.87	2,029.16	5.19	16.558	2.692	12.75	9.00
15.3	32.67	93.89	706.90	1,595.47	4.70	16.993	2.257	9.61	6.75
18 x 6 x 40.8	78.20	192.18	805.04	2,986.52	5.91	15.540	3.710	23.00	18.00
35.7	68.80	171.84	789.20	2,716.51	5.73	15.808	3.442	20.23	15.75
30.6	59.29	150.54	769.77	2,423.82	5.51	16.101	3.149	17.44	13.50
25.5	49.67	128.22	745.00	2,105.87	5.23	16.423	2.827	14.61	11.25
20.4	39.95	104.88	711.81	1,759.60	4.87	16.778	2.472	11.75	9.00
15.3	30.12	80.46	664.03	1,381.41	4.40	17.170	2.080	8.86	6.75



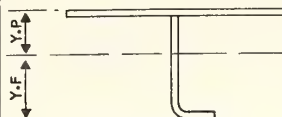
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

56.1 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ²	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,092.82	2,115.48	22,608.23	12.96	20.688	10.687	59.00	30.00
35.7	175.90	970.73	2,082.57	20,773.56	12.77	21.400	9.975	51.73	26.25
30.6	151.09	844.76	2,046.41	18,760.08	12.50	22.208	9.167	44.44	22.50
25.5	126.17	714.79	2,005.30	16,533.23	12.11	23.130	8.245	37.11	18.75
20.4	101.15	580.70	1,955.93	14,048.53	11.55	24.192	7.183	29.75	15.00
17.85	88.70	512.62	1,926.43	12,703.13	11.18	24.781	6.594	26.09	13.14
30 x 27 x 40.8	190.40	1,009.90	2,088.38	21,357.45	12.74	21.148	10.227	56.00	30.00
35.7	166.97	897.18	2,055.40	19,595.62	12.54	21.841	9.534	49.11	26.25
30.6	143.44	780.87	2,019.02	17,666.99	12.25	22.625	8.750	42.19	22.50
25.5	119.80	660.84	1,977.47	15,540.44	11.84	23.516	7.859	35.23	18.75
20.4	96.05	536.97	1,927.28	13,176.21	11.26	24.538	6.837	28.25	15.00
17.85	84.23	474.06	1,897.15	11,900.02	10.89	25.102	6.273	24.77	13.14
30 x 24 x 40.8	180.20	926.88	2,057.26	20,048.32	12.49	21.630	9.745	53.00	30.00
35.7	158.05	823.58	2,024.24	18,367.03	12.27	22.301	9.074	46.48	26.25
30.6	135.79	716.94	1,987.66	16,531.33	11.96	23.058	8.317	39.94	22.50
25.5	113.42	606.86	1,945.64	14,513.48	11.54	23.916	7.459	33.36	18.75
20.4	90.95	493.22	1,894.59	12,278.33	10.95	24.894	6.481	26.75	15.00
17.85	79.76	435.49	1,863.79	11,075.60	10.57	25.432	5.943	23.46	13.14
30 x 21 x 40.8	170.00	843.78	2,021.19	18,676.66	12.19	22.135	9.240	50.00	30.00
35.7	149.12	749.91	1,988.16	17,084.45	11.96	22.782	8.593	43.86	26.25
30.6	128.14	652.98	1,951.39	15,350.56	11.64	23.509	7.866	37.69	22.50
25.5	107.05	552.87	1,908.91	13,450.56	11.21	24.329	7.046	31.48	18.75
20.4	85.85	449.46	1,856.95	11,353.74	10.61	25.261	6.114	25.25	15.00
17.85	75.30	396.91	1,825.44	10,229.01	10.23	25.771	5.604	22.15	13.14
30 x 18 x 40.8	159.80	760.59	1,978.85	17,237.89	11.86	22.664	8.711	47.00	30.00
35.7	140.20	676.18	1,945.88	15,744.24	11.61	23.284	8.091	41.23	26.25
30.6	120.49	588.97	1,908.96	14,121.95	11.28	23.977	7.398	35.44	22.50
25.5	100.67	498.84	1,866.03	12,349.76	10.83	24.757	6.618	29.61	18.75
20.4	80.75	405.69	1,813.14	10,401.23	10.23	25.638	5.737	23.75	15.00
17.85	70.83	358.33	1,780.90	9,359.35	9.85	26.120	5.255	20.83	13.14
30 x 15 x 40.8	149.60	677.30	1,928.48	15,726.95	11.47	23.220	8.155	44.00	30.00
35.7	131.27	602.39	1,895.65	14,342.44	11.21	23.809	7.566	38.61	26.25
30.6	112.84	524.92	1,858.66	12,842.51	10.87	24.465	6.910	33.19	22.50
25.5	94.30	444.80	1,815.33	11,209.01	10.42	25.200	6.175	27.73	18.75
20.4	75.65	361.90	1,761.52	9,419.52	9.81	26.028	5.347	22.25	15.00
17.85	66.36	319.73	1,728.54	8,465.67	9.43	26.477	4.898	19.52	13.14
30 x 12 x 40.8	139.40	593.93	1,867.54	14,138.28	11.01	23.804	7.571	41.00	30.00
35.7	122.35	528.54	1,835.01	12,874.69	10.74	24.359	7.016	35.98	26.25
30.6	105.19	460.84	1,798.07	11,509.04	10.39	24.974	6.401	30.94	22.50
25.5	87.92	390.72	1,754.44	10,026.10	9.94	25.660	5.715	25.86	18.75
20.4	70.55	318.11	1,699.78	8,407.24	9.34	26.429	4.946	20.75	15.00
17.85	61.89	281.13	1,666.08	7,546.95	8.97	26.845	4.530	18.20	13.14
30 x 9 x 40.8	129.20	510.47	1,792.31	12,465.71	10.48	24.420	6.955	38.00	30.00
35.7	113.42	454.63	1,760.33	11,336.23	10.20	24.935	6.440	33.36	26.25
30.6	97.54	396.71	1,723.67	10,118.04	9.85	25.505	5.870	28.69	22.50
25.5	81.55	336.63	1,679.95	8,798.65	9.40	26.138	5.237	23.98	18.75
20.4	65.45	274.30	1,624.64	7,362.95	8.81	26.843	4.532	19.25	15.00
17.85	57.43	242.52	1,590.30	6,602.12	8.45	27.224	4.151	16.89	13.14
30 x 6 x 40.8	119.00	426.92	1,697.10	10,702.41	9.84	25.069	6.306	35.00	30.00
35.7	104.50	380.65	1,666.10	9,721.82	9.56	25.540	5.835	30.73	26.25
30.6	89.89	332.54	1,630.14	8,665.69	9.22	26.059	5.316	26.44	22.50
25.5	75.17	282.51	1,586.73	7,524.10	8.78	26.633	4.742	22.11	18.75
20.4	60.35	230.47	1,531.18	6,285.09	8.21	27.270	4.105	17.75	15.00
17.85	52.96	203.89	1,496.44	5,630.07	7.86	27.613	3.762	15.58	13.14
27 x 27 x 40.8	180.20	888.19	1,862.58	17,064.85	11.52	19.213	9.162	53.00	27.00
35.7	158.05	789.11	1,834.43	15,656.23	11.32	19.840	8.535	46.48	23.62



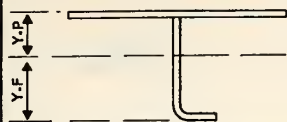
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	686.81	1,802.85	14,112.14	11.05	20.547	7.828	39.94	20.25
25.5	113.42	581.21	1,766.03	12,408.19	10.67	21.349	7.026	33.36	16.87
20.4	90.95	472.21	1,720.50	10,513.42	10.14	22.264	6.111	26.75	13.50
17.85	79.76	416.86	1,692.65	9,490.96	9.79	22.768	5.607	23.46	11.83
27 x 24 x 40.8	170.00	813.27	1,834.66	15,988.97	11.28	19.660	8.715	50.00	27.00
35.7	149.12	722.67	1,806.31	14,646.11	11.07	20.267	8.108	43.86	23.62
30.6	128.14	629.10	1,774.36	13,178.28	10.79	20.948	7.427	37.69	20.25
25.5	107.05	532.47	1,736.91	11,563.85	10.39	21.717	6.658	31.48	16.87
20.4	85.85	432.71	1,690.34	9,775.63	9.85	22.592	5.783	25.25	13.50
17.85	75.30	382.03	1,661.72	8,813.86	9.50	23.071	5.304	22.15	11.83
27 x 21 x 40.8	159.80	738.27	1,802.11	14,860.45	11.01	20.129	8.246	47.00	27.00
35.7	140.20	656.16	1,773.59	13,590.61	10.79	20.712	7.663	41.23	23.62
30.6	120.49	571.34	1,741.27	12,206.57	10.48	21.365	7.010	35.44	20.25
25.5	100.67	483.71	1,703.16	10,689.42	10.08	22.099	6.276	29.61	16.87
20.4	80.75	393.19	1,655.47	9,015.56	9.53	22.929	5.446	23.75	13.50
17.85	70.83	347.20	1,626.04	8,118.30	9.18	23.382	4.993	20.83	11.83
27 x 18 x 40.8	149.60	663.17	1,763.70	13,675.33	10.69	20.621	7.754	44.00	27.00
35.7	131.27	589.60	1,735.03	12,486.59	10.46	21.178	7.197	38.61	23.62
30.6	112.84	513.54	1,702.34	11,194.67	10.14	21.799	6.576	33.19	20.25
25.5	94.30	434.93	1,663.56	9,783.25	9.73	22.494	5.881	27.73	16.87
20.4	75.65	353.67	1,614.70	8,232.19	9.17	23.277	5.098	22.25	13.50
17.85	66.36	312.35	1,584.43	7,403.53	8.82	23.702	4.673	19.52	11.83
27 x 15 x 40.8	139.40	587.98	1,717.68	12,429.23	10.32	21.139	7.236	41.00	27.00
35.7	122.35	522.97	1,688.91	11,330.64	10.08	21.666	6.709	35.98	23.62
30.6	105.19	455.70	1,655.90	10,140.04	9.76	22.251	6.124	30.94	20.25
25.5	87.92	386.12	1,616.45	8,843.60	9.34	22.904	5.471	25.86	16.87
20.4	70.55	314.13	1,566.41	7,424.43	8.78	23.635	4.740	20.75	13.50
17.85	61.89	277.50	1,535.25	6,668.73	8.43	24.031	4.344	18.20	11.83
27 x 12 x 40.8	129.20	512.70	1,661.53	11,117.34	9.89	21.684	6.691	38.00	27.00
35.7	113.42	456.27	1,632.78	10,119.01	9.64	22.178	6.197	33.36	23.62
30.6	97.54	397.82	1,599.53	9,039.90	9.31	22.723	5.652	28.69	20.25
25.5	81.55	337.28	1,559.48	7,868.57	8.89	23.329	5.046	23.98	16.87
20.4	65.45	274.57	1,508.28	6,591.13	8.34	24.005	4.370	19.25	13.50
17.85	57.43	242.64	1,476.26	5,913.05	8.00	24.370	4.005	16.89	11.83
27 x 9 x 40.8	119.00	437.33	1,591.50	9,734.29	9.38	22.259	6.116	35.00	27.00
35.7	104.50	389.52	1,562.97	8,847.56	9.12	22.714	5.661	30.73	23.62
30.6	89.89	339.90	1,529.67	7,891.25	8.79	23.216	5.159	26.44	20.25
25.5	75.17	288.42	1,489.18	6,856.12	8.38	23.771	4.604	22.11	16.87
20.4	60.35	235.01	1,436.98	5,731.04	7.84	24.387	3.988	17.75	13.50
17.85	52.96	207.77	1,404.17	5,135.29	7.51	24.718	3.657	15.58	11.83
27 x 6 x 40.8	108.80	361.87	1,501.72	8,274.13	8.77	22.865	5.510	32.00	27.00
35.7	95.57	322.70	1,473.79	7,511.75	8.51	23.278	5.097	28.11	23.62
30.6	82.24	281.94	1,440.81	6,690.81	8.19	23.731	4.644	24.19	20.25
25.5	68.80	239.54	1,400.26	5,804.05	7.78	24.230	4.145	20.23	16.87
20.4	55.25	195.43	1,347.46	4,842.87	7.26	24.781	3.594	16.25	13.50
17.85	48.49	172.89	1,314.10	4,335.40	6.95	25.076	3.299	14.26	11.83
24 x 24 x 40.8	159.80	703.94	1,613.52	12,436.66	10.07	17.667	7.708	47.00	24.00
35.7	140.20	625.63	1,589.40	11,391.36	9.87	18.208	7.167	41.23	21.00
30.6	120.49	544.69	1,561.65	10,247.28	9.61	18.813	6.562	35.44	18.00
25.5	100.67	461.06	1,528.35	8,987.96	9.24	19.494	5.881	29.61	15.00
20.4	80.75	374.68	1,485.90	7,592.93	8.74	20.265	5.110	23.75	12.00
17.85	70.83	330.80	1,459.34	6,842.92	8.42	20.686	4.689	20.83	10.51
24 x 22 x 40.8	153.00	659.39	1,594.66	11,837.29	9.91	17.952	7.423	45.00	24.00
35.7	134.25	586.11	1,570.31	10,830.22	9.70	18.478	6.897	39.48	21.00
30.6	115.39	510.36	1,542.20	9,730.27	9.42	19.066	6.309	33.94	18.00
25.5	96.42	432.07	1,508.35	8,522.47	9.05	19.725	5.650	28.36	15.00



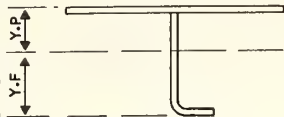
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ⁴
24 x 22 x 20.4	77.35	351.18	1,465.05	7,188.23	8.55	20.469	4.906	22.75	12.00
17.85	67.85	310.09	1,437.89	6,472.59	8.23	20.874	4.501	19.96	10.51
24 x 20 x 40.8	146.20	614.80	1,573.58	11,217.71	9.73	18.246	7.129	43.00	24.00
35.7	128.30	546.56	1,549.00	10,251.75	9.51	18.757	6.618	37.73	21.00
30.6	110.29	476.01	1,520.52	9,198.92	9.23	19.325	6.050	32.44	18.00
25.5	92.17	403.07	1,486.10	8,045.65	8.85	19.961	5.414	27.11	15.00
20.4	73.95	327.68	1,441.91	6,775.23	8.34	20.676	4.699	21.75	12.00
17.85	64.87	289.37	1,414.14	6,095.40	8.02	21.065	4.310	19.08	10.51
24 x 18 x 40.8	139.40	570.16	1,549.86	10,576.89	9.52	18.551	6.824	41.00	24.00
35.7	122.35	506.99	1,525.06	9,655.14	9.30	19.044	6.331	35.98	21.00
30.6	105.19	441.64	1,496.20	8,652.60	9.01	19.592	5.783	30.94	18.00
25.5	87.92	374.05	1,461.19	7,557.08	8.63	20.203	5.172	25.86	15.00
20.4	70.55	304.17	1,416.08	6,353.65	8.12	20.888	4.487	20.75	12.00
17.85	61.89	268.64	1,387.67	5,711.18	7.80	21.259	4.116	18.20	10.51
24 x 16 x 40.8	132.60	525.49	1,522.99	9,913.70	9.30	18.866	6.509	39.00	24.00
35.7	116.40	467.39	1,497.97	9,039.52	9.07	19.340	6.035	34.23	21.00
30.6	100.09	407.25	1,468.74	8,090.68	8.78	19.866	5.509	29.44	18.00
25.5	83.67	345.03	1,433.12	7,056.32	8.39	20.451	4.924	24.61	15.00
20.4	67.15	280.66	1,387.06	5,923.22	7.88	21.105	4.270	19.75	12.00
17.85	58.92	247.92	1,357.99	5,319.71	7.57	21.458	3.917	17.33	10.51
24 x 14 x 40.8	125.80	480.78	1,492.27	9,226.96	9.05	19.192	6.183	37.00	24.00
35.7	110.45	427.76	1,467.05	8,403.97	8.82	19.647	5.728	32.48	21.00
30.6	94.99	372.85	1,437.46	7,512.48	8.52	20.149	5.226	27.94	18.00
25.5	79.42	316.00	1,401.25	6,542.91	8.13	20.706	4.669	23.36	15.00
20.4	63.75	257.14	1,354.22	5,483.68	7.62	21.326	4.049	18.75	12.00
17.85	55.94	227.19	1,324.50	4,920.78	7.31	21.660	3.715	16.45	10.51
24 x 12 x 40.8	119.00	436.02	1,456.83	8,515.39	8.77	19.530	5.845	35.00	24.00
35.7	104.50	388.10	1,431.45	7,747.50	8.54	19.963	5.412	30.73	21.00
30.6	89.89	338.43	1,401.53	6,917.29	8.23	20.439	4.936	26.44	18.00
25.5	75.17	286.95	1,364.73	6,016.37	7.85	20.967	4.408	22.11	15.00
20.4	60.35	233.61	1,316.76	5,034.71	7.34	21.551	3.824	17.75	12.00
17.85	52.96	206.45	1,286.39	4,514.20	7.04	21.866	3.509	15.58	10.51
24 x 10 x 40.8	112.20	391.22	1,415.47	7,777.61	8.46	19.880	5.495	33.00	24.00
35.7	98.55	348.41	1,390.01	7,069.07	8.22	20.289	5.086	28.98	21.00
30.6	84.79	303.99	1,359.81	6,304.33	7.92	20.739	4.636	24.94	18.00
25.5	70.92	257.89	1,322.49	5,476.18	7.53	21.234	4.141	20.86	15.00
20.4	56.95	210.08	1,273.63	4,576.03	7.04	21.782	3.593	16.75	12.00
17.85	49.98	185.71	1,242.64	4,099.72	6.74	22.076	3.299	14.70	10.51
24 x 8 x 40.8	105.40	346.38	1,366.60	7,012.16	8.11	20.244	5.131	31.00	24.00
35.7	92.60	308.70	1,341.16	6,367.55	7.87	20.627	4.748	27.23	21.00
30.6	79.69	269.53	1,310.80	5,672.81	7.57	21.047	4.328	23.44	18.00
25.5	66.67	228.83	1,273.06	4,921.81	7.19	21.509	3.866	19.61	15.00
20.4	53.55	186.54	1,223.44	4,107.30	6.71	22.018	3.357	15.75	12.00
17.85	47.00	164.97	1,191.90	3,677.13	6.41	22.290	3.085	13.82	10.51
24 x 6 x 40.8	98.60	301.50	1,307.95	6,217.44	7.71	20.621	4.754	29.00	24.00
35.7	86.65	268.95	1,282.72	5,641.75	7.47	20.977	4.398	25.48	21.00
30.6	74.59	235.05	1,252.39	5,021.87	7.18	21.365	4.010	21.94	18.00
25.5	62.42	199.75	1,214.43	4,352.69	6.81	21.791	3.584	18.36	15.00
20.4	50.15	163.00	1,164.28	3,628.19	6.34	22.259	3.116	14.75	12.00
17.85	44.02	144.22	1,132.35	3,246.17	6.05	22.508	2.867	12.95	10.51
21 x 20 x 40.8	136.00	520.80	1,358.36	8,423.36	8.54	16.174	6.201	40.00	21.00
35.7	119.37	463.16	1,337.37	7,697.43	8.34	16.619	5.756	35.11	18.37
30.6	102.64	403.49	1,312.46	6,905.24	8.08	17.114	5.261	30.19	15.75
25.5	85.80	341.75	1,281.62	6,036.88	7.74	17.665	4.710	25.23	13.12
20.4	68.85	277.89	1,241.06	5,080.31	7.28	18.281	4.094	20.25	10.50
17.85	60.40	245.42	1,215.17	4,568.66	7.00	18.615	3.760	17.77	9.20



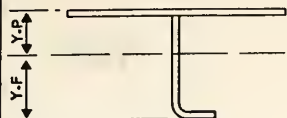
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	481.66	1,337.21	7,923.20	8.35	16.450	5.925	38.00	21.00
35.7	113.42	428.44	1,315.87	7,231.72	8.15	16.879	5.496	33.36	18.37
30.6	97.54	373.32	1,290.47	6,478.85	7.88	17.354	5.021	28.69	15.75
25.5	81.55	316.27	1,258.91	5,655.75	7.54	17.882	4.493	23.98	13.12
20.4	65.45	257.25	1,217.32	4,751.73	7.08	18.472	3.903	19.25	10.50
17.85	57.43	227.22	1,190.75	4,269.38	6.79	18.790	3.585	16.89	9.20
21 x 16 x 40.8	122.40	442.48	1,313.12	7,405.12	8.15	16.736	5.639	36.00	21.00
35.7	107.47	393.69	1,291.43	6,750.81	7.94	17.148	5.227	31.61	18.37
30.6	92.44	343.14	1,265.52	6,040.01	7.67	17.602	4.773	27.19	15.75
25.5	77.30	290.79	1,233.23	5,264.92	7.32	18.106	4.269	22.73	13.12
20.4	62.05	236.59	1,190.57	4,416.14	6.86	18.666	3.709	18.25	10.50
17.85	54.45	209.01	1,163.30	3,964.38	6.58	18.967	3.408	16.01	9.20
21 x 14 x 40.8	115.60	403.25	1,285.43	6,868.14	7.92	17.032	5.343	34.00	21.00
35.7	101.52	358.91	1,263.40	6,253.94	7.70	17.425	4.950	29.86	18.37
30.6	87.34	312.93	1,236.97	5,588.18	7.43	17.857	4.518	25.69	15.75
25.5	73.05	265.29	1,203.93	4,864.03	7.08	18.335	4.040	21.48	13.12
20.4	58.65	215.93	1,160.18	4,073.33	6.62	18.864	3.511	17.25	10.50
17.85	51.47	190.80	1,132.20	3,653.48	6.35	19.148	3.227	15.14	9.20
21 x 12 x 40.8	108.80	363.98	1,253.27	6,311.20	7.66	17.339	5.036	32.00	21.00
35.7	95.57	324.10	1,230.92	5,740.30	7.44	17.712	4.663	28.11	18.37
30.6	82.24	282.71	1,203.99	5,122.77	7.16	18.120	4.255	24.19	15.75
25.5	68.80	239.78	1,170.21	4,452.69	6.82	18.570	3.805	20.23	13.12
20.4	55.25	195.26	1,125.37	3,723.05	6.37	19.067	3.308	16.25	10.50
17.85	48.49	172.59	1,096.69	3,336.53	6.09	19.333	3.042	14.26	9.20
21 x 10 x 40.8	102.00	324.68	1,215.47	5,733.18	7.37	17.658	4.717	30.00	21.00
35.7	89.62	289.26	1,192.83	5,209.04	7.15	18.008	4.367	26.36	18.37
30.6	77.14	252.47	1,165.45	4,643.15	6.87	18.391	3.984	22.69	15.75
25.5	64.55	214.26	1,130.96	4,030.48	6.53	18.811	3.564	18.98	13.12
20.4	51.85	174.59	1,085.10	3,365.07	6.09	19.274	3.101	15.25	10.50
17.85	45.51	154.37	1,055.76	3,013.33	5.82	19.521	2.854	13.39	9.20
21 x 8 x 40.8	95.20	285.33	1,170.38	5,132.84	7.04	17.989	4.386	28.00	21.00
35.7	83.67	254.40	1,147.56	4,659.23	6.82	18.315	4.060	24.61	18.37
30.6	72.04	222.21	1,119.81	4,148.67	6.55	18.670	3.705	21.19	15.75
25.5	60.30	188.73	1,084.72	3,596.95	6.21	19.059	3.316	17.73	13.12
20.4	48.45	153.91	1,037.96	2,999.11	5.78	19.486	2.889	14.25	10.50
17.85	42.53	136.14	1,008.05	2,683.71	5.52	19.713	2.662	12.51	9.20
21 x 6 x 40.8	88.40	245.93	1,115.69	4,508.87	6.66	18.334	4.041	26.00	21.00
35.7	77.72	219.50	1,092.86	4,089.87	6.45	18.633	3.742	22.86	18.37
30.6	66.94	191.93	1,064.92	3,638.63	6.18	18.958	3.417	19.69	15.75
25.5	56.05	163.18	1,029.44	3,151.66	5.85	19.313	3.062	16.48	13.12
20.4	45.05	133.23	982.03	2,624.92	5.44	19.702	2.673	13.25	10.50
17.85	39.56	117.91	951.73	2,347.47	5.19	19.908	2.467	11.63	9.20
18 x 18 x 40.8	119.00	397.74	1,125.67	5,694.26	7.18	14.316	5.059	35.00	18.00
35.7	104.50	354.02	1,107.43	5,197.57	6.99	14.682	4.693	30.73	15.75
30.6	89.89	308.66	1,085.16	4,655.94	6.75	15.084	4.291	26.44	13.50
25.5	75.17	261.63	1,056.82	4,063.24	6.45	15.530	3.845	22.11	11.25
20.4	60.35	212.92	1,018.69	3,412.12	6.05	16.025	3.350	17.75	9.00
15.3	45.42	162.48	963.06	2,693.67	5.50	16.578	2.797	13.36	6.75
18 x 16 x 40.8	112.20	364.10	1,104.32	5,305.27	6.99	14.571	4,804	33.00	18.00
35.7	98.55	324.16	1,085.62	4,836.45	6.80	14.920	4.455	28.98	15.75
30.6	84.79	282.70	1,062.73	4,326.48	6.56	15.304	4.071	24.94	13.50
25.5	70.92	239.71	1,033.56	3,769.98	6.25	15.727	3.648	20.86	11.25
20.4	56.95	195.14	994.29	3,160.54	5.85	16.196	3.179	16.75	9.00
15.3	42.87	148.97	937.10	2,490.46	5.31	16.717	2.658	12.61	6.75
18 x 14 x 40.8	105.40	330.42	1,079.64	4,901.70	6.78	14.835	4.540	31.00	18.00
35.7	92.60	294.27	1,060.47	4,463.04	6.59	15.166	4.209	27.23	15.75
30.6	79.69	256.73	1,036.95	3,987.03	6.34	15.530	3.845	23.44	13.50



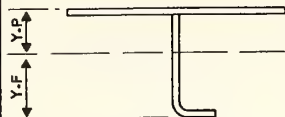
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 25.5	66.67	217.77	1,006.92	3,469.01	6.04	15.930	3.445	19.61	11.25
20.4	53.55	177.35	966.48	2,903.45	5.64	16.371	3.004	15.75	9.00
15.3	40.32	135.46	907.75	2,283.76	5.11	16.859	2.516	11.86	6.75
18 x 12 x 40.8	98.60	296.69	1,050.79	4,482.69	6.55	15.109	4.266	29.00	18.00
35.7	86.65	264.35	1,031.15	4,076.71	6.35	15.421	3.954	25.48	15.75
30.6	74.59	230.74	1,006.99	3,637.15	6.11	15.763	3.612	21.94	13.50
25.5	62.42	195.82	976.10	3,160.04	5.80	16.138	3.237	18.36	11.25
20.4	50.15	159.56	934.51	2,640.67	5.41	16.549	2.826	14.75	9.00
15.3	37.77	121.95	874.28	2,073.49	4.89	17.003	2.372	11.11	6.75
18 x 10 x 40.8	91.80	262.92	1,016.61	4,047.36	6.28	15.394	3.981	27.00	18.00
35.7	80.70	234.41	996.53	3,676.76	6.08	15.685	3.690	23.73	15.75
30.6	69.49	204.73	971.76	3,276.35	5.84	16.003	3.372	20.44	13.50
25.5	58.17	173.86	940.04	2,842.74	5.54	16.351	3.024	17.11	11.25
20.4	46.75	141.77	897.37	2,372.01	5.15	16.732	2.643	13.75	9.00
15.3	35.22	108.43	835.78	1,859.56	4.65	17.150	2.225	10.36	6.75
18 x 8 x 40.8	85.00	229.11	975.47	3,594.73	5.98	15.690	3.685	25.00	18.00
35.7	74.75	204.43	955.02	3,262.48	5.78	15.959	3.416	21.98	15.75
30.6	64.39	178.70	929.73	2,904.09	5.54	16.251	3.124	18.94	13.50
25.5	53.92	151.89	897.29	2,516.76	5.25	16.570	2.805	15.86	11.25
20.4	43.35	123.96	853.68	2,097.27	4.87	16.918	2.457	12.75	9.00
15.3	32.67	94.91	791.01	1,641.85	4.39	17.299	2.076	9.61	6.75
18 x 6 x 40.8	78.20	195.26	925.00	3,123.73	5.63	15.998	3.377	23.00	18.00
35.7	68.80	174.43	904.36	2,833.07	5.44	16.242	3.133	20.23	15.75
30.6	59.29	152.65	878.72	2,519.83	5.20	16.507	2.868	17.44	13.50
25.5	49.67	129.90	845.78	2,181.75	4.92	16.795	2.580	14.61	11.25
20.4	39.95	106.16	801.54	1,816.24	4.56	17.109	2.266	11.75	9.00
15.3	30.12	81.39	738.31	1,420.28	4.10	17.451	1.924	8.86	6.75



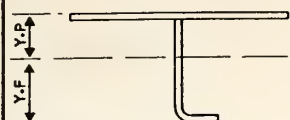
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,107.12	2,448.61	24,015.67	12.70	21.692	9.808	59.00	30.00
35.7	175.90	982.36	2,411.89	21,988.43	12.46	22.383	9.117	51.73	26.25
30.6	151.09	853.92	2,370.47	19,774.89	12.13	23.158	8.342	44.44	22.50
25.5	126.17	721.70	2,321.87	17,342.93	11.68	24.031	7.469	37.11	18.75
20.4	101.15	585.61	2,261.32	14,652.28	11.06	25.020	6.480	29.75	15.00
17.85	88.70	516.64	2,224.06	13,206.46	10.67	25.562	5.938	26.09	13.14
30 x 27 x 40.8	190.40	1,023.18	2,415.64	22,640.42	12.45	22.128	9.372	56.00	30.00
35.7	166.97	908.00	2,378.62	20,700.16	12.20	22.797	8.703	49.11	26.25
30.6	143.44	789.41	2,336.70	18,587.03	11.86	23.546	7.954	42.19	22.50
25.5	119.80	667.29	2,287.28	16,272.30	11.40	24.386	7.114	35.23	18.75
20.4	96.05	541.56	2,225.39	13,720.21	10.77	25.335	6.165	28.25	15.00
17.85	84.23	477.83	2,187.17	12,352.83	10.37	25.852	5.648	24.77	13.14
30 x 24 x 40.8	180.20	939.16	2,377.86	21,207.47	12.18	22.581	8.919	53.00	30.00
35.7	158.05	833.60	2,340.56	19,362.34	11.91	23.227	8.273	46.48	26.25
30.6	135.79	724.86	2,298.11	17,358.04	11.56	23.947	7.553	39.94	22.50
25.5	113.42	612.85	2,247.82	15,169.12	11.09	24.752	6.748	33.36	18.75
20.4	90.95	497.49	2,184.52	12,764.19	10.46	25.657	5.843	26.75	15.00
17.85	79.76	439.00	2,145.29	11,479.44	10.06	26.149	5.351	23.46	13.14
30 x 21 x 40.8	170.00	855.07	2,334.15	19,713.13	11.87	23.054	8.446	50.00	30.00
35.7	149.12	759.14	2,296.57	17,972.06	11.59	23.674	7.826	43.86	26.25
30.6	128.14	660.27	2,253.60	16,085.73	11.22	24.362	7.138	37.69	22.50
25.5	107.05	558.40	2,202.40	14,031.89	10.75	25.129	6.371	31.48	18.75
20.4	85.85	453.42	2,137.62	11,783.28	10.11	25.988	5.512	25.25	15.00
17.85	75.30	400.17	2,097.33	10,585.58	9.72	26.453	5.047	22.15	13.14
30 x 18 x 40.8	159.80	770.90	2,282.97	18,153.35	11.51	23.548	7.952	47.00	30.00
35.7	140.20	684.62	2,245.15	16,526.16	11.22	24.139	7.361	41.23	26.25
30.6	120.49	595.66	2,201.67	14,767.78	10.85	24.792	6.708	35.44	22.50
25.5	100.67	503.92	2,149.56	12,859.01	10.37	25.518	5.982	29.61	18.75
20.4	80.75	409.33	2,083.25	10,776.51	9.73	26.327	5.173	23.75	15.00
17.85	70.83	361.33	2,041.85	9,670.52	9.34	26.764	4.736	20.83	13.14
30 x 15 x 40.8	149.60	686.65	2,222.24	16,523.74	11.10	24.064	7.436	44.00	30.00
35.7	131.27	610.05	2,184.26	15,021.25	10.81	24.623	6.877	38.61	26.25
30.6	112.84	531.00	2,140.31	13,401.70	10.43	25.238	6.262	33.19	22.50
25.5	94.30	449.43	2,087.32	11,648.78	9.95	25.919	5.581	27.73	18.75
20.4	75.65	365.23	2,019.46	9,742.83	9.32	26.676	4.824	22.25	15.00
17.85	66.36	322.48	1,976.95	8,733.51	8.93	27.082	4.418	19.52	13.14
30 x 12 x 40.8	139.40	602.32	2,149.00	14,819.50	10.64	24.604	6.896	41.00	30.00
35.7	122.35	535.43	2,110.99	13,453.64	10.33	25.127	6.373	35.98	26.25
30.6	105.19	466.32	2,066.71	11,984.79	9.95	25.701	5.799	30.94	22.50
25.5	87.92	394.91	2,012.91	10,399.37	9.47	26.334	5.166	25.86	18.75
20.4	70.55	321.13	1,943.58	8,681.14	8.85	27.033	4.467	20.75	15.00
17.85	61.89	283.62	1,900.00	7,773.74	8.48	27.409	4.091	18.20	13.14
30 x 9 x 40.8	129.20	517.92	2,058.96	13,035.39	10.09	25.169	6.331	38.00	30.00
35.7	113.42	460.75	2,021.17	11,819.31	9.79	25.652	5.848	33.36	26.25
30.6	97.54	401.59	1,976.77	10,514.16	9.41	26.181	5.319	28.69	22.50
25.5	81.55	340.37	1,922.39	9,108.86	8.94	26.762	4.738	23.98	18.75
20.4	65.45	277.01	1,851.82	7,590.31	8.34	27.401	4.099	19.25	15.00
17.85	57.43	244.76	1,807.29	6,790.38	7.97	27.743	3.757	16.89	13.14
30 x 6 x 40.8	119.00	433.43	1,945.57	11,165.65	9.45	25.761	5.739	35.00	30.00
35.7	104.50	386.02	1,908.45	10,113.93	9.15	26.200	5.300	30.73	26.25
30.6	89.89	336.84	1,864.38	8,986.70	8.79	26.680	4.820	26.44	22.50
25.5	75.17	285.81	1,809.89	7,775.18	8.33	27.204	4.296	22.11	18.75
20.4	60.35	232.88	1,738.61	6,469.11	7.75	27.779	3.721	17.75	15.00
17.85	52.96	205.89	1,693.45	5,782.53	7.40	28.085	3.415	15.58	13.14
27 x 27 x 40.8	180.20	899.53	2,154.54	18,085.69	11.25	20.106	8.394	53.00	27.00
35.7	158.05	798.35	2,122.25	16,533.44	11.01	20.709	7.791	46.48	23.62
30.6	135.79	694.11	2,085.03	14,841.42	10.69	21.382	7.118	39.94	20.25



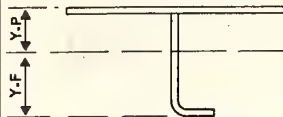
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	586.74	2,040.25	12,987.24	10.26	22.134	6.366	33.36	16.87
20.4	90.95	476.18	1,982.97	10,943.23	9.68	22.981	5.519	26.75	13.50
17.85	79.76	420.13	1,947.06	9,848.61	9.32	23.442	5.058	23.46	11.83
27 x 24 x 40.8	170.00	823.72	2,120.31	16,907.57	10.99	20.526	7.974	50.00	27.00
35.7	149.12	731.20	2,087.57	15,433.36	10.74	21.107	7.393	43.86	23.62
30.6	128.14	635.84	2,049.65	13,830.92	10.41	21.752	6.748	37.69	20.25
25.5	107.05	537.60	2,003.83	12,080.53	9.97	22.471	6.029	31.48	16.87
20.4	85.85	436.39	1,944.96	10,158.03	9.39	23.277	5.223	25.25	13.50
17.85	75.30	385.08	1,907.95	9,131.65	9.02	23.714	4.786	22.15	11.83
27 x 21 x 40.8	159.80	747.83	2,080.51	15,677.87	10.70	20.964	7.536	47.00	27.00
35.7	140.20	663.99	2,047.31	14,289.29	10.43	21.520	6.980	41.23	23.62
30.6	120.49	577.54	2,008.67	12,784.17	10.10	22.136	6.364	35.44	20.25
25.5	100.67	488.43	1,961.74	11,145.39	9.65	22.819	5.681	29.61	16.87
20.4	80.75	396.60	1,901.19	9,352.13	9.07	23.581	4.919	23.75	13.50
17.85	70.83	350.01	1,863.02	8,397.69	8.70	23.992	4.508	20.83	11.83
27 x 18 x 40.8	149.60	671.87	2,033.67	14,393.11	10.36	21.423	7.077	44.00	27.00
35.7	131.27	596.72	2,000.01	13,098.51	10.09	21.951	6.549	38.61	23.62
30.6	112.84	519.20	1,960.64	11,699.19	9.75	22.533	5.967	33.19	20.25
25.5	94.30	439.25	1,912.56	10,180.47	9.30	23.177	5.323	27.73	16.87
20.4	75.65	356.79	1,850.25	8,524.69	8.71	23.893	4.607	22.25	13.50
17.85	66.36	314.94	1,810.88	7,646.12	8.36	24.278	4.222	19.52	11.83
27 x 15 x 40.8	139.40	595.82	1,977.72	13,049.53	9.98	21.902	6.598	41.00	27.00
35.7	122.35	529.40	1,943.65	11,858.13	9.70	22.399	6.101	35.98	23.62
30.6	105.19	460.83	1,903.55	10,573.83	9.35	22.945	5.555	30.94	20.25
25.5	87.92	390.04	1,854.33	9,184.32	8.90	23.547	4.953	25.86	16.87
20.4	70.55	316.97	1,790.22	7,674.84	8.32	24.213	4.287	20.75	13.50
17.85	61.89	279.87	1,749.62	6,876.29	7.97	24.570	3.930	18.20	11.83
27 x 12 x 40.8	129.20	519.70	1,909.72	11,642.97	9.54	22.403	6.097	38.00	27.00
35.7	113.42	462.03	1,875.33	10,564.96	9.25	22.866	5.634	33.36	23.62
30.6	97.54	402.42	1,834.59	9,405.82	8.90	23.373	5.127	28.69	20.25
25.5	81.55	340.81	1,784.27	8,155.39	8.46	23.929	4.571	23.98	16.87
20.4	65.45	277.14	1,718.42	6,801.65	7.89	24.542	3.958	19.25	13.50
17.85	57.43	244.78	1,676.63	6,087.54	7.55	24.869	3.631	16.89	11.83
27 x 9 x 40.8	119.00	443.50	1,825.33	10,168.91	9.02	22.929	5.571	35.00	27.00
35.7	104.50	394.60	1,790.82	9,215.56	8.74	23.354	5.146	30.73	23.62
30.6	89.89	343.98	1,749.63	8,192.66	8.39	23.817	4.683	26.44	20.25
25.5	75.17	291.56	1,698.40	7,092.06	7.95	24.324	4.176	22.11	16.87
20.4	60.35	237.30	1,631.02	5,904.16	7.40	24.880	3.620	17.75	13.50
17.85	52.96	209.69	1,588.18	5,279.15	7.07	25.176	3.324	15.58	11.83
27 x 6 x 40.8	108.80	367.21	1,717.79	8,622.37	8.41	23.481	5.019	32.00	27.00
35.7	95.57	327.12	1,683.58	7,806.20	8.13	23.863	4.637	28.11	23.62
30.6	82.24	285.50	1,642.35	6,931.71	7.79	24.279	4.221	24.19	20.25
25.5	68.80	242.29	1,590.67	5,992.55	7.37	24.733	3.767	20.23	16.87
20.4	55.25	197.45	1,522.31	4,981.32	6.85	25.228	3.272	16.25	13.50
17.85	48.49	174.59	1,478.78	4,450.39	6.53	25.491	3.009	14.26	11.83
24 x 24 x 40.8	159.80	712.75	1,863.88	13,147.52	9.80	18.446	7.054	47.00	24.00
35.7	140.20	632.83	1,835.29	11,999.58	9.56	18.962	6.538	41.23	21.00
30.6	120.49	550.40	1,801.50	10,750.71	9.26	19.532	5.968	35.44	18.00
25.5	100.67	465.43	1,759.81	9,386.02	8.86	20.166	5.334	29.61	15.00
20.4	80.75	377.85	1,705.13	7,887.41	8.33	20.874	4.626	23.75	12.00
17.85	70.83	333.44	1,670.30	7,087.74	8.00	21.257	4.243	20.83	10.51
24 x 22 x 40.8	153.00	667.68	1,840.56	12,493.68	9.62	18.712	6.788	45.00	24.00
35.7	134.25	592.90	1,811.56	11,390.84	9.38	19.212	6.288	39.48	21.00
30.6	115.39	515.75	1,777.18	10,193.47	9.07	19.764	5.736	33.94	18.00
25.5	96.42	436.20	1,734.63	8,888.05	8.67	20.376	5.124	28.36	15.00
20.4	77.35	354.19	1,678.74	7,458.25	8.13	21.057	4.443	22.75	12.00
17.85	67.85	312.59	1,643.10	6,696.93	7.80	21.424	4.076	19.96	10.51



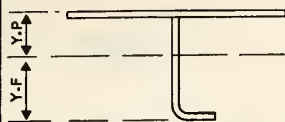
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

61.2 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	622.58	1,814.55	11,820.18	9.43	18.986	6.514	43.00	24.00
35.7	128.30	552.94	1,785.12	10,765.42	9.18	19.469	6.031	37.73	21.00
30.6	110.29	481.09	1,750.12	9,622.57	8.87	20.002	5.498	32.44	18.00
25.5	92.17	406.96	1,706.71	8,379.45	8.46	20.590	4.910	27.11	15.00
20.4	73.95	330.52	1,649.55	7,021.42	7.93	21.243	4.257	21.75	12.00
17.85	64.87	291.73	1,613.07	6,299.85	7.60	21.594	3.906	19.08	10.51
24 x 18 x 40.8	139.40	577.44	1,785.36	11,126.12	9.22	19.268	6.232	41.00	24.00
35.7	122.35	512.96	1,755.49	10,122.64	8.96	19.734	5.766	35.98	21.00
30.6	105.19	446.40	1,719.86	9,037.52	8.64	20.245	5.255	30.94	18.00
25.5	87.92	377.71	1,675.54	7,859.88	8.24	20.809	4.691	25.86	15.00
20.4	70.55	306.85	1,617.08	6,576.69	7.71	21.433	4.067	20.75	12.00
17.85	61.89	270.88	1,579.75	5,896.35	7.38	21.768	3.732	18.20	10.51
24 x 16 x 40.8	132.60	532.26	1,752.35	10,410.55	8.98	19.559	5.941	39.00	24.00
35.7	116.40	472.96	1,722.05	9,461.75	8.73	20.006	5.494	34.23	21.00
30.6	100.09	411.70	1,685.79	8,437.78	8.41	20.495	5.005	29.44	18.00
25.5	83.67	348.46	1,640.55	7,328.98	8.00	21.033	4.467	24.61	15.00
20.4	67.15	283.17	1,580.76	6,123.86	7.47	21.626	3.874	19.75	12.00
17.85	58.92	250.02	1,542.57	5,486.25	7.15	21.943	3.557	17.33	10.51
24 x 14 x 40.8	125.80	487.05	1,714.74	9,672.44	8.73	19.859	5.641	37.00	24.00
35.7	110.45	432.93	1,684.02	8,781.97	8.47	20.285	5.215	32.48	21.00
30.6	94.99	376.99	1,647.12	7,822.78	8.14	20.751	4.749	27.94	18.00
25.5	79.42	319.19	1,600.97	6,786.37	7.74	21.261	4.239	23.36	15.00
20.4	63.75	259.49	1,539.85	5,662.71	7.22	21.823	3.677	18.75	12.00
17.85	55.94	229.15	1,500.80	5,069.40	6.90	22.122	3.378	16.45	10.51
24 x 12 x 40.8	119.00	441.80	1,671.49	8,910.72	8.44	20.169	5.331	35.00	24.00
35.7	104.50	392.87	1,640.38	8,082.50	8.18	20.573	4.927	30.73	21.00
30.6	89.89	342.26	1,602.89	7,191.93	7.86	21.013	4.487	26.44	18.00
25.5	75.17	289.92	1,555.83	6,231.66	7.46	21.495	4.005	22.11	15.00
20.4	60.35	235.80	1,493.43	5,192.99	6.94	22.023	3.477	17.75	12.00
17.85	52.96	208.29	1,453.55	4,645.64	6.63	22.304	3.196	15.58	10.51
24 x 10 x 40.8	112.20	396.52	1,621.22	8,124.23	8.13	20.489	5.011	33.00	24.00
35.7	98.55	352.79	1,589.79	7,362.45	7.87	20.869	4.631	28.98	21.00
30.6	84.79	307.51	1,551.77	6,544.63	7.55	21.282	4.218	24.94	18.00
25.5	70.92	260.63	1,503.90	5,664.44	7.15	21.733	3.767	20.86	15.00
20.4	56.95	212.11	1,440.30	4,714.48	6.65	22.227	3.273	16.75	12.00
17.85	49.98	187.42	1,399.66	4,214.79	6.34	22.489	3.011	14.70	10.51
24 x 8 x 40.8	105.40	351.20	1,562.08	7,311.75	7.77	20.819	4.681	31.00	24.00
35.7	92.60	312.69	1,530.46	6,620.90	7.52	21.174	4.326	27.23	21.00
30.6	79.69	272.75	1,492.03	5,880.20	7.20	21.559	3.941	23.44	18.00
25.5	66.67	231.34	1,443.49	5,084.28	6.81	21.978	3.522	19.61	15.00
20.4	53.55	188.41	1,378.89	4,226.91	6.32	22.435	3.065	15.75	12.00
17.85	47.00	166.54	1,337.64	3,776.67	6.03	22.677	2.823	13.82	10.51
24 x 6 x 40.8	98.60	305.85	1,491.48	6,471.97	7.37	21.161	4.339	29.00	24.00
35.7	86.65	272.56	1,459.90	5,856.89	7.12	21.488	4.012	25.48	21.00
30.6	74.59	237.97	1,421.30	5,197.97	6.81	21.843	3.657	21.94	18.00
25.5	62.42	202.03	1,372.35	4,490.74	6.44	22.228	3.272	18.36	15.00
20.4	50.15	164.71	1,307.10	3,730.04	5.97	22.646	2.854	14.75	12.00
17.85	44.02	145.67	1,265.47	3,331.09	5.69	22.868	2.632	12.95	10.51
21 x 20 x 40.8	136.00	527.27	1,564.29	8,872.86	8.26	16.828	5.672	40.00	21.00
35.7	119.37	468.48	1,538.41	8,080.26	8.04	17.248	5.252	35.11	18.37
30.6	102.64	407.75	1,506.99	7,220.73	7.75	17.709	4.791	30.19	15.75
25.5	85.80	345.05	1,467.24	6,285.45	7.39	18.216	4.284	25.23	13.12
20.4	68.85	280.33	1,414.02	5,263.89	6.91	18.777	3.723	20.25	10.50
17.85	60.40	247.48	1,379.73	4,721.38	6.62	19.078	3.422	17.77	9.20
21 x 18 x 40.8	129.20	487.69	1,537.97	8,331.16	8.07	17.083	5.417	38.00	21.00
35.7	113.42	433.41	1,511.53	7,578.62	7.84	17.486	5.014	33.36	18.37
30.6	97.54	377.31	1,479.37	6,764.29	7.55	17.928	4.572	28.69	15.75



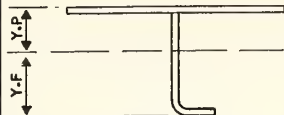
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	319.37	1,438.61	5,880.33	7.18	18.412	4.088	23.98	13.12
20.4	65.45	259.54	1,384.01	4,917.46	6.71	18.947	3.553	19.25	10.50
17.85	57.43	229.16	1,348.85	4,407.25	6.42	19.233	3.267	16.89	9.20
21 x 16 x 40.8	122.40	448.07	1,508.07	7,772.27	7.85	17.346	5.154	36.00	21.00
35.7	107.47	398.31	1,481.07	7,062.54	7.62	17.731	4.769	31.61	18.37
30.6	92.44	346.85	1,448.14	6,296.16	7.33	18.152	4.348	27.19	15.75
25.5	77.30	293.68	1,406.36	5,466.24	6.96	18.613	3.887	22.73	13.12
20.4	62.05	238.74	1,350.35	4,564.63	6.49	19.120	3.380	18.25	10.50
17.85	54.45	210.83	1,314.32	4,087.93	6.21	19.390	3.110	16.01	9.20
21 x 14 x 40.8	115.60	408.41	1,473.84	7,195.36	7.62	17.618	4.882	34.00	21.00
35.7	101.52	363.18	1,446.26	6,531.39	7.38	17.984	4.516	29.86	18.37
30.6	87.34	316.38	1,412.57	5,815.90	7.09	18.383	4.117	25.69	15.75
25.5	73.05	267.98	1,369.74	5,042.86	6.73	18.818	3.682	21.48	13.12
20.4	58.65	217.94	1,312.33	4,205.23	6.26	19.296	3.204	17.25	10.50
17.85	51.47	192.50	1,275.44	3,763.29	5.98	19.549	2.951	15.14	9.20
21 x 12 x 40.8	108.80	368.72	1,434.23	6,599.54	7.35	17.899	4.601	32.00	21.00
35.7	95.57	328.03	1,406.11	5,984.51	7.12	18.244	4.256	28.11	18.37
30.6	82.24	285.89	1,371.67	5,323.02	6.83	18.619	3.881	24.19	15.75
25.5	68.80	242.27	1,327.82	4,609.88	6.47	19.028	3.472	20.23	13.12
20.4	55.25	197.13	1,269.05	3,839.06	6.01	19.475	3.025	16.25	10.50
17.85	48.49	174.17	1,231.35	3,433.20	5.74	19.712	2.788	14.26	9.20
21 x 10 x 40.8	102.00	328.99	1,387.90	5,983.86	7.06	18.189	4.311	30.00	21.00
35.7	89.62	292.85	1,359.28	5,421.18	6.83	18.512	3.988	26.36	18.37
30.6	77.14	255.38	1,324.14	4,817.02	6.54	18.862	3.638	22.69	15.75
25.5	64.55	216.55	1,279.35	4,166.97	6.18	19.243	3.257	18.98	13.12
20.4	51.85	176.32	1,219.33	3,465.93	5.74	19.658	2.842	15.25	10.50
17.85	45.51	155.83	1,180.90	3,097.51	5.47	19.877	2.623	13.39	9.20
21 x 8 x 40.8	95.20	289.23	1,332.95	5,347.32	6.73	18.488	4.012	28.00	21.00
35.7	83.67	257.65	1,303.96	4,840.66	6.50	18.788	3.712	24.61	18.37
30.6	72.04	224.86	1,268.25	4,297.37	6.22	19.112	3.388	21.19	15.75
25.5	60.30	190.82	1,222.66	3,713.78	5.87	19.463	3.037	17.73	13.12
20.4	48.45	155.50	1,161.62	3,085.65	5.44	19.844	2.656	14.25	10.50
17.85	42.53	137.49	1,122.64	2,756.08	5.19	20.045	2.455	12.51	9.20
21 x 6 x 40.8	88.40	249.43	1,266.74	4,688.83	6.36	18.798	3.702	26.00	21.00
35.7	77.72	222.42	1,237.59	4,242.13	6.13	19.072	3.428	22.86	18.37
30.6	66.94	194.32	1,201.55	3,763.51	5.86	19.368	3.132	19.69	15.75
25.5	56.05	165.08	1,155.47	3,249.96	5.52	19.687	2.813	16.48	13.12
20.4	45.05	134.67	1,093.83	2,698.00	5.11	20.033	2.467	13.25	10.50
17.85	39.56	119.15	1,054.57	2,408.77	4.87	20.216	2.284	11.63	9.20
18 x 18 x 40.8	119.00	402.71	1,291.53	5,986.26	6.92	14.865	4.635	35.00	18.00
35.7	104.50	358.14	1,268.25	5,445.83	6.72	15.206	4.294	30.73	15.75
30.6	89.89	311.99	1,239.36	4,860.33	6.46	15.578	3.922	26.44	13.50
25.5	75.17	264.25	1,202.13	4,224.34	6.14	15.986	3.514	22.11	11.25
20.4	60.35	214.90	1,151.61	3,531.49	5.72	16.433	3.067	17.75	9.00
15.3	45.42	163.90	1,077.94	2,774.25	5.18	16.926	2.574	13.36	6.75
18 x 16 x 40.8	112.20	368.69	1,264.75	5,566.68	6.73	15.099	4.401	33.00	18.00
35.7	98.55	327.97	1,240.79	5,058.41	6.52	15.423	4.077	28.98	15.75
30.6	84.79	285.80	1,211.05	4,509.02	6.26	15.777	3.723	24.94	13.50
25.5	70.92	242.15	1,172.72	3,913.77	5.94	16.163	3.337	20.86	11.25
20.4	56.95	196.99	1,120.81	3,267.12	5.53	16.585	2.915	16.75	9.00
15.3	42.87	150.31	1,045.39	2,562.57	5.00	17.049	2.451	12.61	6.75
18 x 14 x 40.8	105.40	334.63	1,233.91	5,133.23	6.51	15.340	4.160	31.00	18.00
35.7	92.60	297.79	1,209.28	4,659.43	6.30	15.647	3.853	27.23	15.75
30.6	79.69	259.59	1,178.67	4,148.42	6.05	15.980	3.520	23.44	13.50
25.5	66.67	220.03	1,139.24	3,596.11	5.73	16.343	3.157	19.61	11.25
20.4	53.55	179.08	1,085.94	2,997.74	5.32	16.740	2.760	15.75	9.00
15.3	40.32	136.71	1,008.85	2,347.76	4.80	17.173	2.327	11.86	6.75



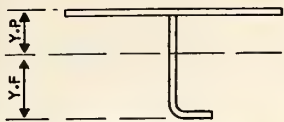
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

40t

STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	300.54	1,198.05	4,685.22	6.27	15.589	3.911	29.00	18.00
35.7	86.65	267.57	1,172.74	4,248.36	6.07	15.877	3.623	25.48	15.75
30.6	74.59	233.37	1,141.28	3,778.16	5.81	16.190	3.310	21.94	13.50
25.5	62.42	197.91	1,100.78	3,271.12	5.49	16.528	2.972	18.36	11.25
20.4	50.15	161.17	1,046.16	2,723.22	5.10	16.897	2.603	14.75	9.00
15.3	37.77	123.12	967.56	2,129.77	4.59	17.299	2.201	11.11	6.75
18 x 10 x 40.8	91.80	266.41	1,155.80	4,221.89	6.01	15.847	3.653	27.00	18.00
35.7	80.70	237.33	1,129.87	3,824.65	5.80	16.115	3.385	23.73	15.75
30.6	69.49	207.13	1,097.62	3,397.85	5.55	16.404	3.096	20.44	13.50
25.5	58.17	175.78	1,056.12	2,938.56	5.24	16.718	2.782	17.11	11.25
20.4	46.75	143.25	1,000.32	2,443.41	4.85	17.057	2.443	13.75	9.00
15.3	35.22	109.52	920.53	1,908.52	4.36	17.427	2.073	10.36	6.75
18 x 8 x 40.8	85.00	232.25	1,105.32	3,742.46	5.70	16.114	3.386	25.00	18.00
35.7	74.75	207.07	1,078.87	3,387.69	5.50	16.360	3.140	21.98	15.75
30.6	64.39	180.88	1,045.95	3,007.06	5.25	16.625	2.875	18.94	13.50
25.5	53.92	153.63	1,003.65	2,598.13	4.95	16.911	2.589	15.86	11.25
20.4	43.35	125.32	946.95	2,158.15	4.58	17.221	2.279	12.75	9.00
15.3	32.67	95.92	866.45	1,683.94	4.11	17.557	1.943	9.61	6.75
18 x 6 x 40.8	78.20	198.05	1,043.91	3,246.06	5.36	16.390	3.110	23.00	18.00
35.7	68.80	176.78	1,017.18	2,936.87	5.16	16.613	2.887	20.23	15.75
30.6	59.29	154.60	983.87	2,605.36	4.92	16.852	2.648	17.44	13.50
25.5	49.67	131.48	941.11	2,249.58	4.64	17.110	2.390	14.61	11.25
20.4	39.95	107.39	884.02	1,867.28	4.28	17.388	2.112	11.75	9.00
15.3	30.12	82.31	803.63	1,455.96	3.84	17.688	1.812	8.86	6.75



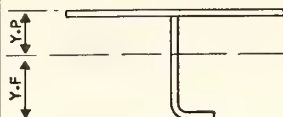
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 18 x 30.6	89.89	92.80	206.15	1,167.85	6.42	5.665	12.585	26.44	13.50
25.5	75.17	82.67	178.30	1,030.80	6.56	5.781	12.469	22.11	11.25
20.4	60.35	72.40	148.87	888.95	6.73	5.971	12.279	17.75	9.00
15.3	45.42	61.98	117.55	740.59	6.97	6.300	11.950	13.36	6.75
18 x 16 x 30.6	84.79	91.42	188.47	1,123.46	6.47	5.961	12.289	24.94	13.50
25.5	70.92	81.47	163.00	991.32	6.60	6.082	12.168	20.86	11.25
20.4	56.95	71.37	136.09	854.44	6.77	6.279	11.971	16.75	9.00
15.3	42.87	61.13	107.47	711.11	7.01	6.617	11.633	12.61	6.75
18 x 14 x 30.6	79.69	89.80	170.67	1,073.81	6.51	6.292	11.958	23.44	13.50
25.5	66.67	80.06	147.60	947.25	6.64	6.418	11.832	19.61	11.25
20.4	53.55	70.17	123.25	816.01	6.80	6.621	11.629	15.75	9.00
15.3	40.32	60.13	97.36	678.40	7.03	6.968	11.282	11.86	6.75
18 x 12 x 30.6	74.59	87.86	152.73	1,017.92	6.54	6.665	11.585	21.94	13.50
25.5	62.42	78.37	132.12	897.74	6.66	6.795	11.455	18.36	11.25
20.4	50.15	68.73	110.36	772.96	6.82	7.004	11.246	14.75	9.00
15.3	37.77	58.94	87.22	641.92	7.03	7.359	10.891	11.11	6.75
18 x 10 x 30.6	69.49	85.51	134.68	954.52	6.54	7.087	11.163	20.44	13.50
25.5	58.17	76.32	116.56	841.72	6.66	7.222	11.028	17.11	11.25
20.4	46.75	66.99	97.42	724.41	6.81	7.436	10.814	13.75	9.00
15.3	35.22	57.50	77.06	600.97	7.01	7.799	10.451	10.36	6.75
18 x 8 x 30.6	64.39	82.59	116.49	881.99	6.51	7.571	10.679	18.94	13.50
25.5	53.92	73.78	100.90	777.80	6.62	7.708	10.542	15.86	11.25
20.4	43.35	64.83	84.42	669.22	6.76	7.927	10.323	12.75	9.00
15.3	32.67	55.72	66.86	554.67	6.95	8.296	9.954	9.61	6.75
18 x 6 x 30.6	59.29	78.88	98.18	798.21	6.43	8.130	10.120	17.44	13.50
25.5	49.67	70.56	85.16	704.20	6.54	8.269	9.981	14.61	11.25
20.4	39.95	62.09	71.36	605.93	6.67	8.491	9.759	11.75	9.00
15.3	30.12	53.47	56.63	501.90	6.84	8.863	9.387	8.86	6.75
18 x 4 x 30.6	54.19	73.98	79.73	700.33	6.27	8.783	9.467	15.94	13.50
25.5	45.42	66.31	69.32	618.53	6.37	8.922	9.328	13.36	11.25
20.4	36.55	58.25	58.49	532.62	6.50	9.144	9.106	10.75	9.00
15.3	27.57	46.37	50.51	441.21	6.65	9.514	8.736	8.11	6.75
16 x 12 x 30.6	69.49	72.94	131.36	762.12	5.84	5.802	10.448	20.44	12.00
25.5	58.17	65.41	113.97	675.31	5.96	5.925	10.325	17.11	10.00
20.4	46.75	57.74	95.48	584.70	6.12	6.124	10.126	13.75	8.00
15.3	35.22	49.95	75.65	488.87	6.32	6.462	9.788	10.36	6.00
16 x 10 x 30.6	64.39	71.06	115.41	714.69	5.86	6.193	10.057	18.94	12.00
25.5	53.92	63.76	100.16	633.12	5.97	6.321	9.929	15.86	10.00
20.4	43.35	56.33	83.95	547.82	6.12	6.526	9.724	12.75	8.00
15.3	32.67	48.77	66.56	457.41	6.31	6.872	9.378	9.61	6.00
16 x 8 x 30.6	59.29	68.70	99.31	659.91	5.85	6.645	9.605	17.44	12.00
25.5	49.67	61.70	86.26	584.53	5.95	6.776	9.474	14.61	10.00
20.4	39.95	54.57	72.36	505.52	6.09	6.986	9.264	11.75	8.00
15.3	30.12	47.31	57.44	421.55	6.27	7.339	8.911	8.86	6.00
16 x 6 x 30.6	54.19	65.65	83.08	595.91	5.78	7.173	9.077	15.94	12.00
25.5	45.42	59.04	72.26	527.97	5.89	7.307	8.943	13.36	10.00
20.4	36.55	52.29	60.71	456.53	6.01	7.520	8.730	10.75	8.00
15.3	27.57	45.41	48.29	380.30	6.17	7.876	8.374	8.11	6.00
16 x 4 x 30.6	49.09	61.54	66.70	520.15	5.65	7.798	8.452	14.44	12.00
25.5	41.17	55.46	58.16	461.32	5.74	7.932	8.318	12.11	10.00
20.4	33.15	49.00	49.24	399.11	5.86	8.145	8.105	9.75	8.00
15.3	25.02	39.10	42.89	332.36	6.00	8.500	7.750	7.36	6.00



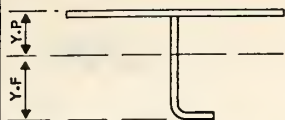
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30†

STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 12 x 30.6	66.94	65.92	121.02	650.80	5.49	5.377	9.873	19.69	11.25
25.5	56.05	59.29	105.19	578.22	5.61	5.497	9.753	16.48	9.37
20.4	45.05	52.53	88.26	502.23	5.76	5.690	9.560	13.25	7.50
15.3	33.95	45.66	70.04	421.51	5.96	6.018	9.232	9.98	5.62
15 x 11 x 30.6	64.39	65.14	113.59	631.32	5.51	5.558	9.692	18.94	11.25
25.5	53.92	58.60	98.74	560.81	5.62	5.680	9.570	15.86	9.37
20.4	43.35	51.94	82.86	486.92	5.77	5.876	9.374	12.75	7.50
15.3	32.67	45.16	65.77	408.34	5.96	6.208	9.042	9.61	5.62
15 x 10 x 30.6	61.84	64.26	106.13	610.38	5.52	5.751	9.499	18.19	11.25
25.5	51.80	57.83	92.26	542.13	5.63	5.876	9.374	15.23	9.37
20.4	41.65	51.28	77.45	470.52	5.77	6.075	9.175	12.25	7.50
15.3	31.40	44.61	61.49	394.28	5.96	6.412	8.838	9.23	5.62
15 x 9 x 30.6	59.29	63.28	98.62	587.83	5.52	5.960	9.290	17.44	11.25
25.5	49.67	56.97	85.76	522.03	5.63	6.087	9.163	14.61	9.37
20.4	39.95	50.54	72.02	452.92	5.77	6.289	8.961	11.75	7.50
15.3	30.12	43.99	57.21	379.24	5.94	6.629	8.621	8.86	5.62
15 x 8 x 30.6	56.74	62.16	91.09	563.45	5.51	6.186	9.064	16.69	11.25
25.5	47.55	55.99	79.24	500.35	5.62	6.314	8.936	13.98	9.37
20.4	38.25	49.71	66.57	433.98	5.75	6.519	8.731	11.25	7.50
15.3	28.85	43.29	52.91	363.12	5.92	6.862	8.388	8.48	5.62
15 x 7 x 30.6	54.19	60.89	83.51	537.02	5.49	6.431	8.819	15.94	11.25
25.5	45.42	54.88	72.69	476.89	5.59	6.561	8.689	13.36	9.37
20.4	36.55	48.75	61.11	413.54	5.72	6.767	8.483	10.75	7.50
15.3	27.57	42.49	48.61	345.78	5.88	7.113	8.137	8.11	5.62
15 x 6 x 30.6	51.64	59.42	75.90	508.28	5.46	6.697	8.553	15.19	11.25
25.5	43.30	53.60	66.11	451.42	5.56	6.828	8.422	12.73	9.37
20.4	34.85	47.65	55.63	391.42	5.68	7.036	8.214	10.25	7.50
15.3	26.30	41.58	44.30	327.08	5.83	7.383	7.867	7.73	5.62
15 x 5 x 30.6	49.09	57.72	68.25	476.89	5.41	6.987	8.263	14.44	11.25
25.5	41.17	52.11	59.51	423.68	5.50	7.119	8.131	12.11	9.37
20.4	33.15	46.38	50.14	367.39	5.62	7.328	7.922	9.75	7.50
15.3	25.02	39.98	40.51	306.87	5.76	7.676	7.574	7.36	5.62
15 x 4 x 30.6	46.54	55.70	60.56	442.48	5.33	7.306	7.944	13.69	11.25
25.5	39.05	50.35	52.89	393.35	5.43	7.438	7.812	11.48	9.37
20.4	31.45	44.62	44.87	341.21	5.54	7.646	7.604	9.25	7.50
15.3	23.75	35.65	39.26	284.95	5.67	7.992	7.258	6.98	5.62
14 x 10 x 30.6	59.29	57.74	97.08	515.96	5.17	5.315	8.935	17.44	10.50
25.5	49.67	52.14	84.56	459.58	5.28	5.435	8.815	14.61	8.75
20.4	39.95	46.42	71.10	400.21	5.42	5.628	8.622	11.75	7.00
15.3	30.12	40.59	56.54	336.68	5.60	5.954	8.296	8.86	5.25
14 x 9 x 30.6	56.74	56.88	90.11	496.88	5.17	5.514	8.736	16.69	10.50
25.5	47.55	51.38	78.50	442.51	5.28	5.637	8.613	13.98	8.75
20.4	38.25	45.76	66.03	385.18	5.42	5.833	8.417	11.25	7.00
15.3	28.85	40.03	52.53	323.75	5.59	6.163	8.087	8.48	5.25
14 x 8 x 30.6	54.19	55.90	83.10	476.20	5.17	5.731	8.519	15.94	10.50
25.5	45.42	50.51	72.42	424.04	5.28	5.856	8.394	13.36	8.75
20.4	36.55	45.02	60.94	368.97	5.41	6.054	8.196	10.75	7.00
15.3	27.57	39.41	48.51	309.85	5.57	6.388	7.862	8.11	5.25
14 x 7 x 30.6	51.64	54.77	76.05	453.71	5.16	5.966	8.284	15.19	10.50
25.5	43.30	49.53	66.31	404.00	5.26	6.093	8.157	12.73	8.75
20.4	34.85	44.17	55.84	351.42	5.38	6.294	7.956	10.25	7.00
15.3	26.30	38.69	44.48	294.87	5.54	6.630	7.620	7.73	5.25



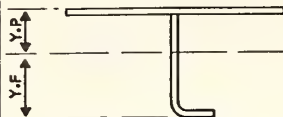
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
14 x 6 x 30.6	49.09	53.46	68.96	429.15	5.13	6.223	8.027	14.44	10.50
25.5	41.17	48.38	60.17	382.16	5.23	6.351	7.899	12.11	8.75
20.4	33.15	43.18	50.71	332.36	5.35	6.554	7.696	9.75	7.00
15.3	25.02	37.87	40.44	278.67	5.49	6.891	7.359	7.36	5.25
14 x 5 x 30.6	46.54	51.93	61.84	402.23	5.08	6.505	7.745	13.69	10.50
25.5	39.05	47.04	54.01	358.29	5.18	6.633	7.617	11.48	8.75
20.4	31.45	42.03	45.57	311.58	5.29	6.837	7.413	9.25	7.00
15.3	23.75	36.39	36.90	261.10	5.43	7.175	7.075	6.98	5.25
14 x 4 x 30.6	43.99	50.11	54.67	372.59	5.02	6.815	7.435	12.94	10.50
25.5	36.92	45.45	47.82	332.07	5.11	6.944	7.306	10.86	8.75
20.4	29.75	40.42	40.67	288.86	5.21	7.147	7.103	8.75	7.00
15.3	22.47	32.33	35.76	241.97	5.34	7.484	6.766	6.61	5.25
13 x 9 x 30.6	54.19	50.76	81.83	415.10	4.83	5.073	8.177	15.94	9.75
25.5	45.42	46.02	71.43	370.84	4.93	5.191	8.059	13.36	8.12
20.4	36.55	41.17	60.20	323.95	5.07	5.381	7.869	10.75	6.50
15.3	27.57	36.21	47.97	273.41	5.23	5.700	7.550	8.11	4.87
13 x 8 x 30.6	51.64	49.91	75.35	397.79	4.83	5.279	7.971	15.19	9.75
25.5	43.30	45.26	65.79	355.30	4.93	5.400	7.850	12.73	8.12
20.4	34.85	40.52	55.47	310.23	5.06	5.593	7.657	10.25	6.50
15.3	26.30	35.66	44.22	261.56	5.22	5.915	7.335	7.73	4.87
13 x 7 x 30.6	49.09	48.92	68.83	378.88	4.82	5.505	7.745	14.44	9.75
25.5	41.17	44.39	60.13	338.38	4.92	5.628	7.622	12.11	8.12
20.4	33.15	39.76	50.72	295.34	5.04	5.823	7.427	9.75	6.50
15.3	25.02	35.02	40.46	248.76	5.19	6.148	7.102	7.36	4.87
13 x 6 x 30.6	46.54	47.77	62.27	358.16	4.80	5.752	7.498	13.69	9.75
25.5	39.05	43.38	54.44	319.88	4.89	5.876	7.374	11.48	8.12
20.4	31.45	38.89	45.96	279.10	5.01	6.073	7.177	9.25	6.50
15.3	23.75	34.29	36.70	234.87	5.15	6.400	6.850	6.98	4.87
13 x 5 x 30.6	43.99	46.41	55.67	335.35	4.76	6.024	7.226	12.94	9.75
25.5	36.92	42.19	48.72	299.56	4.85	6.149	7.101	10.86	8.12
20.4	29.75	37.86	41.17	261.34	4.96	6.347	6.903	8.75	6.50
15.3	22.47	32.92	33.42	219.75	5.09	6.674	6.576	6.61	4.87
13 x 4 x 30.6	41.44	44.78	49.02	310.10	4.70	6.325	6.925	12.19	9.75
25.5	34.80	40.76	42.97	277.15	4.78	6.451	6.799	10.23	8.12
20.4	28.05	36.37	36.63	241.82	4.89	6.648	6.602	8.25	6.50
15.3	21.20	29.14	32.39	203.24	5.01	6.974	6.276	6.23	4.87
12 x 9 x 30.6	51.64	44.93	73.79	342.10	4.48	4.636	7.614	15.19	9.00
25.5	43.30	40.89	64.56	306.68	4.58	4.750	7.500	12.73	7.50
20.4	34.85	36.76	54.53	268.97	4.71	4.933	7.317	10.25	6.00
15.3	26.30	32.53	43.52	228.03	4.87	5.239	7.011	7.73	4.50
12 x 8 x 30.6	49.09	44.19	67.84	327.81	4.48	4.832	7.418	14.44	9.00
25.5	41.17	40.24	59.37	293.80	4.58	4.949	7.301	12.11	7.50
20.4	33.15	36.19	50.16	257.52	4.71	5.134	7.116	9.75	6.00
15.3	25.02	32.04	40.05	218.06	4.86	5.445	6.805	7.36	4.50
12 x 7 x 30.6	46.54	43.34	61.85	312.16	4.48	5.047	7.203	13.69	9.00
25.5	39.05	39.48	54.15	279.72	4.58	5.166	7.084	11.48	7.50
20.4	31.45	35.53	45.77	245.05	4.69	5.354	6.896	9.25	6.00
15.3	23.75	31.48	36.57	207.26	4.84	5.667	6.583	6.98	4.50
12 x 6 x 30.6	43.99	42.34	55.82	294.93	4.46	5.284	6.966	12.94	9.00
25.5	36.92	38.60	48.90	264.26	4.56	5.404	6.846	10.86	7.50
20.4	29.75	34.77	41.36	231.40	4.67	5.594	6.656	8.75	6.00
15.3	22.47	30.83	33.08	195.50	4.80	5.909	6.341	6.61	4.50



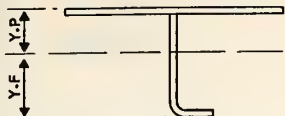
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
12 x 5 x 30.6	41.44	41.14	49.74	275.86	4.43	5.545	6.705	12.19	9.00
25.5	34.80	37.55	43.62	247.20	4.52	5.667	6.583	10.23	7.50
20.4	28.05	33.86	36.94	216.41	4.62	5.858	6.392	8.25	6.00
15.3	21.20	29.58	30.06	182.65	4.75	6.174	6.076	6.23	4.50
12 x 4 x 30.6	38.89	39.71	43.63	254.64	4.37	5.837	6.413	11.44	9.00
25.5	32.67	36.28	38.32	228.29	4.46	5.958	6.292	9.61	7.50
20.4	26.35	32.50	32.76	199.85	4.56	6.149	6.101	7.75	6.00
15.3	19.92	26.07	29.13	168.55	4.67	6.464	5.786	5.86	4.50
11 x 8 x 25.5	39.05	35.45	53.14	239.22	4.23	4.502	6.748	11.48	6.87
22.95	35.29	33.78	49.20	225.30	4.29	4.579	6.671	10.38	6.19
20.4	31.45	32.05	45.00	210.58	4.35	4.680	6.570	9.25	5.50
17.85	27.64	30.33	40.65	195.43	4.42	4.807	6.443	8.13	4.82
15.3	23.75	28.56	36.00	179.17	4.50	4.977	6.273	6.98	4.12
11 x 7 x 25.5	36.92	34.80	48.37	227.69	4.23	4.708	6.542	10.86	6.87
22.95	33.38	33.17	44.79	214.38	4.28	4.786	6.464	9.82	6.19
20.4	29.75	31.48	40.98	200.30	4.34	4.888	6.362	8.75	5.50
17.85	26.15	29.81	37.03	185.78	4.41	5.017	6.233	7.69	4.82
15.3	22.47	28.07	32.80	170.18	4.48	5.188	6.062	6.61	4.12
11 x 6 x 25.5	34.80	34.04	43.57	214.98	4.21	4.934	6.316	10.23	6.87
22.95	31.46	32.45	40.36	202.37	4.26	5.014	6.236	9.25	6.19
20.4	28.05	30.82	36.93	189.00	4.32	5.117	6.133	8.25	5.50
17.85	24.66	29.19	33.39	175.20	4.38	5.247	6.003	7.25	4.82
15.3	21.20	27.50	29.59	160.36	4.45	5.420	5.830	6.23	4.12
11 x 5 x 25.5	32.67	33.13	38.74	200.88	4.18	5.186	6.064	9.61	6.87
22.95	29.55	31.60	35.90	189.07	4.23	5.267	5.983	8.69	6.19
20.4	26.35	30.02	32.87	176.53	4.28	5.370	5.880	7.75	5.50
17.85	23.17	28.45	29.74	163.56	4.34	5.501	5.749	6.82	4.82
15.3	19.92	26.37	26.82	149.60	4.40	5.673	5.577	5.86	4.12
11 x 4 x 25.5	30.55	32.01	33.87	185.16	4.13	5.466	5.784	8.98	6.87
22.95	27.64	30.56	31.42	174.27	4.17	5.547	5.703	8.13	6.19
20.4	24.65	28.79	29.06	162.69	4.22	5.651	5.599	7.25	5.50
17.85	21.69	26.07	27.55	150.69	4.27	5.781	5.469	6.38	4.82
15.3	18.65	23.14	26.00	137.73	4.33	5.953	5.297	5.48	4.12
10 x 8 x 25.5	36.92	30.90	47.10	191.24	3.88	4.060	6.190	10.86	6.25
22.95	33.38	29.52	43.67	180.53	3.93	4.134	6.116	9.82	5.63
20.4	29.75	28.10	39.99	169.15	3.99	4.229	6.021	8.75	5.00
17.85	26.15	26.68	36.18	157.38	4.06	4.350	5.900	7.69	4.38
15.3	22.47	25.21	32.07	144.68	4.13	4.511	5.739	6.61	3.75
10 x 7 x 25.5	34.80	30.35	42.78	181.99	3.88	4.254	5.996	10.23	6.25
22.95	31.46	29.00	39.67	171.73	3.93	4.329	5.921	9.25	5.63
20.4	28.05	27.62	36.34	160.84	3.99	4.426	5.824	8.25	5.00
17.85	24.66	26.23	32.88	149.54	4.05	4.549	5.701	7.25	4.38
15.3	21.20	24.80	29.15	137.34	4.12	4.711	5.539	6.23	3.75
10 x 6 x 25.5	32.67	29.70	38.43	171.73	3.87	4.468	5.782	9.61	6.25
22.95	29.55	28.40	35.65	162.01	3.92	4.545	5.705	8.69	5.63
20.4	26.35	27.05	32.66	151.65	3.97	4.643	5.607	7.75	5.00
17.85	23.17	25.70	29.56	140.91	4.03	4.767	5.483	6.82	4.38
15.3	19.92	24.31	26.22	129.29	4.09	4.931	5.319	5.86	3.75
12.75	16.69	22.72	22.91	116.93	4.15	5.146	5.104	4.91	3.13
10 x 5 x 25.5	30.55	28.92	34.05	160.30	3.84	4.707	5.543	8.98	6.25
22.95	27.64	27.66	31.60	151.18	3.89	4.785	5.465	8.13	5.63
20.4	24.65	26.36	28.97	141.46	3.94	4.884	5.366	7.25	5.00
17.85	21.69	25.06	26.23	131.36	3.99	5.008	5.242	6.38	4.38
15.3	18.65	23.28	23.72	120.41	4.04	5.172	5.078	5.48	3.75



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

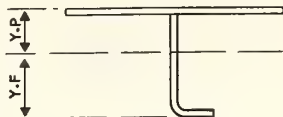
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STEEL

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 4 x 25.5	28.42	27.96	29.64	147.47	3.80	4.976	5.274	8.36	6.25
22.95	25.72	26.76	27.52	139.07	3.84	5.053	5.197	7.57	5.63
20.4	22.95	25.25	25.52	130.10	3.88	5.152	5.098	6.75	5.00
17.85	20.20	22.88	24.28	120.75	3.93	5.276	4.974	5.94	4.38
15.3	17.37	20.33	22.99	110.59	3.98	5.440	4.810	5.11	3.75
9 x 6 x 25.5	30.55	25.59	33.50	134.20	3.52	4.006	5.244	8.98	5.62
20.4	24.65	23.45	28.55	119.10	3.61	4.171	5.079	7.25	4.50
15.3	18.65	21.23	22.97	102.07	3.72	4.443	4.807	5.48	3.37
10.2	12.54	16.59	18.93	81.79	3.83	4.929	4.321	3.69	2.25
9 x 5 x 25.5	28.42	24.93	29.57	125.13	3.50	4.232	5.018	8.36	5.62
20.4	22.95	22.87	25.23	110.96	3.59	4.399	4.851	6.75	4.50
15.3	17.37	20.32	20.73	94.91	3.69	4.672	4.578	5.11	3.37
10.2	11.69	14.69	18.50	75.75	3.78	5.155	4.095	3.44	2.25
9 x 4 x 25.5*	26.30	24.12	25.61	114.89	3.46	4.486	4.764	7.73	5.62
20.4*	21.25	21.88	22.15	101.81	3.54	4.654	4.596	6.25	4.50
15.3	16.10	17.65	20.11	86.94	3.63	4.926	4.324	4.73	3.37
10.2	10.84	12.79	17.96	69.11	3.69	5.403	3.847	3.19	2.25
8 x 6 x 25.5*	28.42	21.71	28.76	102.06	3.16	3.548	4.702	8.36	5.00
20.4*	22.95	20.03	24.60	91.10	3.25	3.703	4.547	6.75	4.00
15.3	17.37	18.29	19.85	78.54	3.35	3.957	4.293	5.11	3.00
10.2	11.69	14.36	16.47	63.27	3.45	4.408	3.842	3.44	2.00
8 x 5 x 25.5	26.30	21.17	25.29	95.07	3.15	3.759	4.491	7.73	5.00
20.4	21.25	19.55	21.65	84.76	3.23	3.915	4.335	6.25	4.00
15.3	16.10	17.48	17.87	72.90	3.32	4.171	4.079	4.73	3.00
10.2	10.84	12.66	16.10	58.46	3.40	4.619	3.631	3.19	2.00
8 x 4 x 25.5*	24.17	20.49	21.78	87.11	3.11	3.999	4.251	7.11	5.00
20.4*	19.55	18.67	18.95	77.59	3.19	4.156	4.094	5.75	4.00
15.3	14.82	15.10	17.34	66.59	3.27	4.410	3.840	4.36	3.00
10.2	9.99	10.95	15.64	53.15	3.32	4.853	3.397	2.94	2.00

*Indicates similarity to (L) shape.



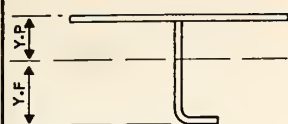
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 18 x 30.6	89.89	100.29	211.57	1,243.83	6.57	5.879	12.402	26.44	13.50
25.5	75.17	90.22	183.25	1,105.15	6.72	6.031	12.250	22.11	11.25
20.4	60.35	79.99	153.22	960.72	6.91	6.270	12.011	17.75	9.00
15.3	45.42	69.61	121.11	808.08	7.17	6.673	11.608	13.36	6.75
18 x 16 x 30.6	84.79	98.83	193.46	1,195.83	6.62	6.181	12.100	24.94	13.50
25.5	70.92	88.93	167.55	1,062.04	6.76	6.339	11.942	20.86	11.25
20.4	56.95	78.88	140.09	922.56	6.95	6.585	11.696	16.75	9.00
15.3	42.87	68.68	110.75	774.95	7.19	6.997	11.284	12.61	6.75
18 x 14 x 30.6	79.69	97.11	175.22	1,142.24	6.65	6.519	11.762	23.44	13.50
25.5	66.67	87.42	151.77	1,014.02	6.79	6.681	11.600	19.61	11.25
20.4	53.55	77.58	126.92	880.19	6.97	6.935	11.346	15.75	9.00
15.3	40.32	67.58	100.37	738.33	7.20	7.356	10.925	11.86	6.75
18 x 12 x 30.6	74.59	95.06	156.86	1,082.06	6.67	6.898	11.383	21.94	13.50
25.5	62.42	85.61	135.90	960.22	6.81	7.065	11.216	18.36	11.25
20.4	50.15	76.02	113.69	832.86	6.98	7.326	10.955	14.75	9.00
15.3	37.77	66.28	89.96	697.63	7.19	7.755	10.526	11.11	6.75
18 x 10 x 30.6	69.49	92.57	138.38	1,013.96	6.67	7.327	10.954	20.44	13.50
25.5	58.17	83.43	119.95	899.52	6.80	7.499	10.782	17.11	11.25
20.4	46.75	74.14	100.41	779.67	6.96	7.765	10.516	13.75	9.00
15.3	35.22	64.70	79.52	652.14	7.16	8.201	10.080	10.36	6.75
18 x 8 x 30.6	64.39	89.47	119.78	936.29	6.63	7.817	10.464	18.94	13.50
25.5	53.92	80.71	103.92	830.50	6.75	7.992	10.289	15.86	11.25
20.4	43.35	71.81	87.08	719.45	6.90	8.262	10.019	12.75	9.00
15.3	32.67	62.74	69.05	600.95	7.08	8.703	9.578	9.61	6.75
18 x 6 x 30.6	59.29	85.54	101.05	846.86	6.54	8.380	9.901	17.44	13.50
25.5	49.67	77.27	87.80	751.32	6.65	8.557	9.724	14.61	11.25
20.4	39.95	68.84	73.70	650.69	6.79	8.829	9.452	11.75	9.00
15.3	30.12	58.55	60.26	542.92	6.95	9.272	9.009	8.86	6.75
18 x 4 x 30.6	54.19	80.35	82.20	742.78	6.37	9.036	9.245	15.94	13.50
25.5	45.42	71.59	72.73	659.55	6.48	9.212	9.069	13.36	11.25
20.4	36.55	60.26	64.96	571.46	6.60	9.483	8.798	10.75	9.00
15.3	27.57	48.03	57.02	476.58	6.74	9.922	8.359	8.11	6.75
16 x 12 x 30.6	69.49	79.39	135.11	814.17	5.98	6.026	10.255	20.44	12.00
25.5	58.17	71.90	117.38	725.94	6.11	6.185	10.096	17.11	10.00
20.4	46.75	64.28	98.44	633.13	6.27	6.432	9.849	13.75	8.00
15.3	35.22	56.52	78.05	533.72	6.48	6.838	9.443	10.36	6.00
16 x 10 x 30.6	64.39	77.39	118.75	762.82	5.98	6.424	9.857	18.94	12.00
25.5	53.92	70.13	103.20	679.84	6.11	6.587	9.694	15.86	10.00
20.4	43.35	62.75	86.60	592.37	6.26	6.840	9.441	12.75	8.00
15.3	32.67	55.22	68.71	498.46	6.45	7.255	9.026	9.61	6.00
16 x 8 x 30.6	59.29	74.87	102.25	703.71	5.96	6.882	9.399	17.44	12.00
25.5	49.67	67.91	88.94	626.95	6.08	7.050	9.231	14.61	10.00
20.4	39.95	60.83	74.70	545.84	6.22	7.307	8.974	11.75	8.00
15.3	30.12	53.60	59.34	458.49	6.39	7.727	8.554	8.86	6.00
16 x 6 x 30.6	54.19	71.62	85.62	634.92	5.89	7.415	8.866	15.94	12.00
25.5	45.42	65.05	74.58	565.67	6.00	7.585	8.696	13.36	10.00
20.4	36.55	58.35	62.74	492.21	6.13	7.845	8.436	10.75	8.00
15.3	27.57	49.93	51.51	412.79	6.28	8.267	8.014	8.11	6.00
16 x 4 x 30.6	49.09	67.24	68.86	553.87	5.74	8.044	8.237	14.44	12.00
25.5	41.17	60.13	61.21	493.81	5.84	8.213	8.068	12.11	10.00
20.4	33.15	50.72	55.03	429.74	5.96	8.472	7.809	9.75	8.00
15.3	25.02	40.50	48.71	360.05	6.08	8.890	7.391	7.36	6.00

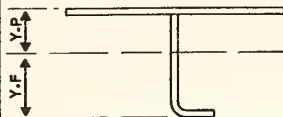


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 12 x 30.6	66.94	71.99	124.58	697.21	5.62	5.597	9.684	19.69	11.25
25.5	56.05	65.40	108.40	623.33	5.75	5.750	9.531	16.48	9.37
20.4	45.05	58.69	91.04	545.32	5.91	5.990	9.291	13.25	7.50
15.3	33.95	51.85	72.27	461.34	6.11	6.384	8.897	9.98	5.62
15 x 11 x 30.6	64.39	71.15	116.95	676.00	5.63	5.780	9.501	18.94	11.25
25.5	53.92	64.66	101.77	604.20	5.76	5.937	9.344	15.86	9.37
20.4	43.35	58.05	85.49	528.30	5.91	6.180	9.101	12.75	7.50
15.3	32.67	51.30	67.88	446.48	6.11	6.578	8.703	9.61	5.62
15 x 10 x 30.6	61.84	70.22	109.28	653.25	5.64	5.978	9.303	18.19	11.25
25.5	51.80	63.83	95.12	583.70	5.76	6.137	9.144	15.23	9.37
20.4	41.65	57.32	79.92	510.10	5.91	6.382	8.899	12.25	7.50
15.3	31.40	50.69	63.48	430.67	6.09	6.784	8.497	9.23	5.62
15 x 9 x 30.6	59.29	69.16	101.58	628.79	5.63	6.190	9.091	17.44	11.25
25.5	49.67	62.90	88.44	561.70	5.75	6.351	8.930	14.61	9.37
20.4	39.95	56.51	74.34	490.63	5.90	6.600	8.681	11.75	7.50
15.3	30.12	50.00	59.07	413.80	6.07	7.005	8.276	8.86	5.62
15 x 8 x 30.6	56.74	67.97	93.85	602.39	5.62	6.419	8.862	16.69	11.25
25.5	47.55	61.85	81.74	538.02	5.74	6.582	8.699	13.98	9.37
20.4	38.25	55.60	68.75	469.72	5.87	6.833	8.448	11.25	7.50
15.3	28.85	49.22	54.66	395.77	6.04	7.240	8.041	8.48	5.62
15 x 7 x 30.6	54.19	66.61	86.08	573.84	5.60	6.666	8.615	15.94	11.25
25.5	45.42	60.65	75.02	512.46	5.71	6.831	8.450	13.36	9.37
20.4	36.55	54.56	63.13	447.21	5.84	7.084	8.197	10.75	7.50
15.3	27.57	48.33	50.24	376.44	5.99	7.493	7.788	8.11	5.62
15 x 6 x 30.6	51.64	65.04	78.28	542.85	5.56	6.935	8.346	15.19	11.25
25.5	43.30	59.26	68.27	484.78	5.67	7.101	8.180	12.73	9.37
20.4	34.85	53.36	57.51	422.93	5.79	7.354	7.927	10.25	7.50
15.3	26.30	45.81	47.32	355.68	5.93	7.764	7.517	7.73	5.62
15 x 5 x 30.6	49.09	63.22	70.44	509.10	5.50	7.228	8.053	14.44	11.25
25.5	41.17	57.65	61.50	454.72	5.60	7.394	7.887	12.11	9.37
20.4	33.15	51.86	51.96	396.64	5.72	7.648	7.633	9.75	7.50
15.3	25.02	41.37	46.14	333.32	5.85	8.056	7.225	7.36	5.62
15 x 4 x 30.6	46.54	61.06	62.56	472.20	5.42	7.548	7.733	13.69	11.25
25.5	39.05	54.70	55.76	421.95	5.52	7.713	7.568	11.48	9.37
20.4	31.45	46.21	50.32	368.09	5.63	7.966	7.315	9.25	7.50
15.3	23.75	36.93	44.75	309.17	5.75	8.372	6.909	6.98	5.62
14 x 10 x 30.6	59.29	63.33	100.05	553.83	5.29	5.535	8.746	17.44	10.50
25.5	49.67	57.76	87.23	496.28	5.41	5.689	8.592	14.61	8.75
20.4	39.95	52.08	73.41	435.10	5.55	5.927	8.354	11.75	7.00
15.3	30.12	46.28	58.37	368.66	5.73	6.316	7.965	8.86	5.25
14 x 9 x 30.6	56.74	62.40	92.89	533.04	5.29	5.738	8.543	16.69	10.50
25.5	47.55	56.94	81.00	477.50	5.40	5.895	8.386	13.98	8.75
20.4	38.25	51.36	68.19	418.38	5.54	6.136	8.145	11.25	7.00
15.3	28.85	45.67	54.24	354.09	5.71	6.528	7.753	8.48	5.25
14 x 8 x 30.6	54.19	61.34	85.69	510.55	5.28	5.958	8.323	15.94	10.50
25.5	45.42	56.00	74.75	457.23	5.39	6.117	8.164	13.36	8.75
20.4	36.55	50.55	62.95	400.39	5.52	6.360	7.921	10.75	7.00
15.3	27.57	44.97	50.11	338.47	5.68	6.755	7.526	8.11	5.25
14 x 7 x 30.6	51.64	60.13	78.45	486.13	5.26	6.197	8.084	15.19	10.50
25.5	43.30	54.93	68.48	435.28	5.37	6.357	7.924	12.73	8.75
20.4	34.85	49.61	57.70	380.97	5.50	6.602	7.679	10.25	7.00
15.3	26.30	44.17	45.97	321.69	5.64	6.998	7.283	7.73	5.25



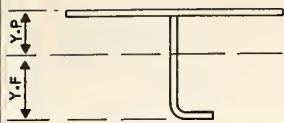
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

11.47 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
14 x 6 x 30.6	49.09	58.73	71.17	459.54	5.23	6.457	7.824	14.44	10.50
25.5	41.17	53.69	62.17	411.44	5.33	6.618	7.663	12.11	8.75
20.4	33.15	48.53	52.44	359.95	5.45	6.864	7.417	9.75	7.00
15.3	25.02	41.82	43.25	303.62	5.59	7.261	7.020	7.36	5.25
14 x 5 x 30.6	46.54	57.09	63.86	430.47	5.18	6.741	7.540	13.69	10.50
25.5	39.05	52.24	55.84	385.45	5.28	6.902	7.379	11.48	8.75
20.4	31.45	47.16	47.27	337.13	5.39	7.149	7.132	9.25	7.00
15.3	23.75	37.66	42.17	284.10	5.51	7.545	6.736	6.98	5.25
14 x 4 x 30.6	43.99	55.14	56.51	398.56	5.10	7.053	7.228	12.94	10.50
25.5	36.92	49.49	50.52	357.01	5.20	7.214	7.067	10.86	8.75
20.4	29.75	41.86	45.77	312.25	5.30	7.459	6.822	8.75	7.00
15.3	22.47	33.49	40.90	262.95	5.41	7.852	6.429	6.61	5.25
13 x 9 x 30.6	54.19	55.91	84.43	446.73	4.94	5.291	7.990	15.94	9.75
25.5	45.42	51.21	73.76	401.41	5.05	5.442	7.839	13.36	8.12
20.4	36.55	46.39	62.19	352.90	5.19	5.674	7.607	10.75	6.50
15.3	27.57	41.47	49.53	299.78	5.35	6.052	7.229	8.11	4.87
13 x 8 x 30.6	51.64	54.99	77.76	427.79	4.94	5.501	7.780	15.19	9.75
25.5	43.30	50.38	67.96	384.26	5.04	5.654	7.627	12.73	8.12
20.4	34.85	45.67	57.32	337.60	5.17	5.889	7.392	10.25	6.50
15.3	26.30	40.85	45.68	286.40	5.32	6.270	7.011	7.73	4.87
13 x 7 x 30.6	49.09	53.92	71.06	407.17	4.92	5.730	7.551	14.44	9.75
25.5	41.17	49.44	62.13	365.64	5.03	5.885	7.396	12.11	8.12
20.4	33.15	44.84	52.44	321.03	5.15	6.122	7.159	9.75	6.50
15.3	25.02	40.14	41.82	271.99	5.29	6.504	6.777	7.36	4.87
13 x 6 x 30.6	46.54	52.68	64.32	384.62	4.89	5.980	7.301	13.69	9.75
25.5	39.05	48.33	56.28	345.33	4.99	6.136	7.145	11.48	8.12
20.4	31.45	43.88	47.54	303.03	5.11	6.375	6.906	9.25	6.50
15.3	23.75	37.95	39.31	256.42	5.24	6.758	6.523	6.98	4.87
13 x 5 x 30.6	43.99	51.22	57.53	359.87	4.85	6.255	7.026	12.94	9.75
25.5	36.92	47.04	50.40	323.11	4.94	6.412	6.869	10.86	8.12
20.4	29.75	42.62	42.74	283.42	5.05	6.650	6.631	8.75	6.50
15.3	22.47	34.07	38.34	239.55	5.17	7.032	6.249	6.61	4.87
13 x 4 x 30.6	41.44	49.47	50.71	332.57	4.78	6.558	6.723	12.19	9.75
25.5	34.80	44.49	45.48	298.69	4.87	6.714	6.567	10.23	8.12
20.4	28.05	37.68	41.39	261.97	4.97	6.952	6.329	8.25	6.50
15.3	21.20	30.18	37.18	221.22	5.07	7.331	5.950	6.23	4.87
12 x 9 x 30.6	51.64	49.71	76.20	369.45	4.59	4.848	7.433	15.19	9.00
25.5	43.30	45.71	66.71	333.10	4.70	4.993	7.288	12.73	7.50
20.4	34.85	41.61	56.35	293.94	4.83	5.216	7.065	10.25	6.00
15.3	26.30	37.40	44.94	250.70	4.98	5.578	6.703	7.73	4.50
12 x 8 x 30.6	49.09	48.91	70.08	353.74	4.59	5.048	7.233	14.44	9.00
25.5	41.17	44.99	61.36	318.79	4.69	5.195	7.086	12.11	7.50
20.4	33.15	40.98	51.85	281.09	4.82	5.421	6.860	9.75	6.00
15.3	25.02	36.86	41.37	239.38	4.96	5.786	6.495	7.36	4.50
12 x 7 x 30.6	46.54	47.98	63.91	336.56	4.58	5.266	7.015	13.69	9.00
25.5	39.05	44.16	55.99	303.20	4.68	5.416	6.865	11.48	7.50
20.4	31.45	40.25	47.33	267.13	4.80	5.644	6.637	9.25	6.00
15.3	23.75	36.23	37.79	227.15	4.93	6.011	6.270	6.98	4.50
12 x 6 x 30.6	43.99	46.89	57.70	317.71	4.56	5.506	6.775	12.94	9.00
25.5	36.92	43.19	50.58	286.14	4.65	5.657	6.624	10.86	7.50
20.4	29.75	39.40	42.80	251.92	4.76	5.886	6.395	8.75	6.00
15.3	22.47	34.20	35.49	213.90	4.88	6.254	6.027	6.61	4.50



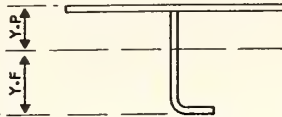
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ⁴	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
12 x 5 x 30.6	41.44	45.60	51.45	296.91	4.52	5.770	6.511	12.19	9.00
25.5	34.80	42.05	45.15	267.38	4.61	5.922	6.359	10.23	7.50
20.4	28.05	38.24	38.39	235.28	4.71	6.152	6.129	8.25	6.00
15.3	21.20	30.60	34.62	199.49	4.82	6.519	5.762	6.23	4.50
12 x 4 x 30.6	38.89	44.05	45.16	273.85	4.45	6.063	6.218	11.44	9.00
25.5	32.67	39.69	40.66	246.67	4.54	6.214	6.067	9.61	7.50
20.4	26.35	33.68	37.17	216.99	4.63	6.444	5.837	7.75	6.00
15.3	19.92	27.00	33.57	183.77	4.73	6.807	5.474	5.86	4.50
11 x 8 x 25.5	39.05	39.83	54.96	260.51	4.34	4.740	6.541	11.48	6.87
22.95	35.29	38.17	50.89	246.03	4.39	4.835	6.446	10.38	6.19
20.4	31.45	36.46	46.53	230.61	4.46	4.956	6.325	9.25	5.50
17.85	27.64	34.76	42.02	214.59	4.52	5.107	6.174	8.13	4.82
15.3	23.75	33.00	37.18	197.22	4.59	5.304	5.977	6.98	4.12
11 x 7 x 25.5	36.92	39.11	50.04	247.66	4.33	4.949	6.332	10.86	6.87
22.95	33.38	37.50	46.34	233.81	4.38	5.045	6.236	9.82	6.19
20.4	29.75	35.83	42.39	219.03	4.44	5.168	6.113	8.75	5.50
17.85	26.15	34.16	38.29	203.67	4.50	5.319	5.962	7.69	4.82
15.3	22.47	32.44	33.89	186.99	4.56	5.518	5.763	6.61	4.12
11 x 6 x 25.5	34.80	38.27	45.09	233.54	4.30	5.179	6.102	10.23	6.87
22.95	31.46	36.70	41.77	220.39	4.35	5.276	6.005	9.25	6.19
20.4	28.05	35.08	38.22	206.36	4.41	5.399	5.882	8.25	5.50
17.85	24.66	33.47	34.54	191.75	4.46	5.552	5.729	7.25	4.82
15.3	21.20	30.58	31.80	175.86	4.52	5.750	5.531	6.23	4.12
11 x 5 x 25.5	32.67	37.27	40.12	217.95	4.27	5.433	5.848	9.61	6.87
22.95	29.55	35.76	37.18	205.62	4.31	5.531	5.750	8.69	6.19
20.4	26.35	34.04	34.20	192.44	4.36	5.654	5.627	7.75	5.50
17.85	23.17	30.78	32.64	178.69	4.41	5.806	5.475	6.82	4.82
15.3	19.92	27.27	31.03	163.73	4.46	6.004	5.277	5.86	4.12
11 x 4 x 25.5	30.55	35.11	36.05	200.64	4.20	5.715	5.566	8.98	6.87
22.95	27.64	32.56	34.61	189.26	4.25	5.812	5.469	8.13	6.19
20.4	24.65	29.84	33.12	177.07	4.29	5.935	5.346	7.25	5.50
17.85	21.69	27.00	31.63	164.33	4.33	6.086	5.195	6.38	4.82
15.3	18.65	23.95	30.09	150.43	4.38	6.282	4.999	5.48	4.12
10 x 8 x 25.5	36.92	34.89	48.76	209.10	3.98	4.289	5.992	10.86	6.25
22.95	33.38	33.53	45.19	197.90	4.03	4.379	5.902	9.82	5.63
20.4	29.75	32.12	41.37	185.92	4.09	4.494	5.787	8.75	5.00
17.85	26.15	30.72	37.40	173.39	4.15	4.636	5.645	7.69	4.38
15.3	22.47	29.27	33.12	159.73	4.22	4.823	5.458	6.61	3.75
10 x 7 x 25.5	34.80	34.29	44.30	198.71	3.97	4.486	5.795	10.23	6.25
22.95	31.46	32.96	41.07	187.98	4.02	4.577	5.704	9.25	5.63
20.4	28.05	31.58	37.60	176.48	4.08	4.693	5.588	8.25	5.00
17.85	24.66	30.21	34.00	164.45	4.13	4.838	5.443	7.25	4.38
15.3	21.20	28.79	30.11	151.31	4.19	5.025	5.256	6.23	3.75
10 x 6 x 25.5	32.67	33.57	39.81	187.23	3.95	4.704	5.577	9.61	6.25
22.95	29.55	32.28	36.91	177.04	4.00	4.796	5.485	8.69	5.63
20.4	26.35	30.94	33.81	166.11	4.05	4.913	5.368	7.75	5.00
17.85	23.17	29.61	30.58	154.66	4.10	5.058	5.223	6.82	4.38
15.3	19.92	27.09	28.23	142.13	4.16	5.246	5.035	5.86	3.75
12.75	16.69	23.44	26.84	128.65	4.20	5.488	4.793	4.91	3.13
10 x 5 x 25.5	30.55	32.70	35.28	174.50	3.92	4.945	5.336	8.98	6.25
22.95	27.64	31.46	32.74	164.94	3.96	5.038	5.243	8.13	5.63
20.4	24.65	30.00	30.17	154.66	4.01	5.156	5.125	7.25	5.00
17.85	21.69	27.15	28.89	143.88	4.06	5.300	4.981	6.38	4.38
15.3	18.65	24.07	27.55	132.07	4.10	5.487	4.794	5.48	3.75



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

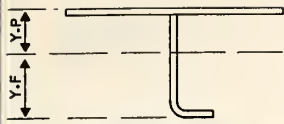
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STEEL

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 4 x 25.5	28.42	30.73	31.64	160.28	3.87	5.215	5.066	8.36	6.25
22.95	25.72	28.53	30.46	151.46	3.91	5.308	4.973	7.57	5.63
20.4	22.95	26.17	29.23	141.96	3.95	5.425	4.856	6.75	5.00
17.85	20.20	23.70	28.00	131.97	3.99	5.568	4.713	5.94	4.38
15.3	17.37	21.03	26.73	121.01	4.02	5.753	4.528	5.11	3.75
9 x 6 x 25.5	30.55	29.09	34.72	146.90	3.60	4.231	5.050	8.98	5.62
20.4	24.65	26.98	29.56	130.91	3.69	4.428	4.853	7.25	4.50
15.3	18.65	23.73	24.78	112.51	3.79	4.741	4.540	5.48	3.37
10.2	12.54	17.07	22.48	90.04	3.86	5.276	4.005	3.69	2.25
9 x 5 x 25.5	28.42	28.36	30.66	136.72	3.57	4.459	4.822	8.36	5.62
20.4	22.95	26.13	26.32	121.69	3.65	4.658	4.623	6.75	4.50
15.3	17.37	21.00	24.20	104.34	3.74	4.970	4.311	5.11	3.37
10.2	11.69	15.12	21.97	83.12	3.78	5.498	3.783	3.44	2.25
9 x 4 x 25.5*	26.30	26.57	27.44	125.29	3.52	4.716	4.565	7.73	5.62
20.4*	21.25	22.67	25.51	111.40	3.60	4.913	4.368	6.25	4.50
15.3	16.10	18.25	23.48	95.31	3.66	5.222	4.059	4.73	3.37
10.2	10.84	13.17	21.34	75.57	3.69	5.739	3.542	3.19	2.25
8 x 6 x 25.5*	28.42	24.83	29.83	112.22	3.23	3.762	4.519	8.36	5.00
20.4*	22.95	23.18	25.47	100.51	3.32	3.946	4.335	6.75	4.00
15.3	17.37	20.49	21.46	86.81	3.41	4.236	4.045	5.11	3.00
10.2	11.69	14.75	19.64	69.75	3.47	4.729	3.552	3.44	2.00
8 x 5 x 25.5	26.30	24.22	26.24	104.30	3.21	3.975	4.306	7.73	5.00
20.4	21.25	22.42	22.63	93.28	3.29	4.160	4.121	6.25	4.00
15.3	16.10	18.05	20.97	80.34	3.36	4.450	3.831	4.73	3.00
10.2	10.84	13.01	19.20	64.21	3.40	4.936	3.345	3.19	2.00
8 x 4 x 25.5*	24.17	22.61	23.46	95.34	3.17	4.217	4.064	7.11	5.00
20.4*	19.55	19.35	21.95	85.15	3.24	4.401	3.880	5.75	4.00
15.3	14.82	15.60	20.35	73.14	3.30	4.688	3.593	4.36	3.00
10.2	9.99	11.26	18.65	58.15	3.31	5.163	3.118	2.94	2.00

*Indicates similarity to (L) shape.



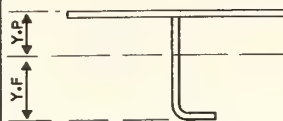
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		r	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 20 x 30.6	102.64	139.64	283.50	1,993.98	7.76	7.033	14.280	30.19	15.75
25.5	85.80	125.84	244.96	1,771.76	7.93	7.233	14.080	25.23	13.12
20.4	68.85	111.86	204.31	1,540.57	8.15	7.540	13.773	20.25	10.50
17.85	60.40	104.86	183.23	1,421.42	8.29	7.757	13.556	17.77	9.20
21 x 18 x 30.6	97.54	137.80	261.83	1,924.25	7.80	7.349	13.964	28.69	15.75
25.5	81.55	124.22	226.24	1,709.08	7.97	7.554	13.759	23.98	13.12
20.4	65.45	110.46	188.72	1,485.01	8.18	7.869	13.444	19.25	10.50
17.85	57.43	103.57	169.26	1,369.42	8.31	8.090	13.223	16.89	9.20
21 x 16 x 30.6	92.44	135.69	240.06	1,847.59	7.83	7.697	13.616	27.19	15.75
25.5	77.30	122.35	207.45	1,640.29	7.99	7.907	13.406	22.73	13.12
20.4	62.05	108.85	173.08	1,424.20	8.20	8.229	13.084	18.25	10.50
17.85	54.45	102.08	155.26	1,312.62	8.32	8.454	12.859	16.01	9.20
21 x 14 x 30.6	87.34	133.22	218.18	1,762.90	7.85	8.080	13.233	25.69	15.75
25.5	73.05	120.18	188.59	1,564.46	8.00	8.296	13.017	21.48	13.12
20.4	58.65	106.97	157.40	1,357.36	8.20	8.624	12.689	17.25	10.50
17.85	51.47	100.35	141.22	1,250.32	8.32	8.853	12.460	15.14	9.20
21 x 12 x 30.6	82.24	130.31	196.19	1,668.85	7.84	8.506	12.807	24.19	15.75
25.5	68.80	117.62	169.65	1,480.46	7.99	8.726	12.587	20.23	13.12
20.4	55.25	104.76	141.67	1,283.57	8.18	9.060	12.253	16.25	10.50
17.85	48.49	98.31	127.15	1,181.67	8.29	9.293	12.020	14.26	9.20
21 x 10 x 30.6	77.14	126.82	174.10	1,563.80	7.81	8.982	12.331	22.69	15.75
25.5	64.55	114.55	150.65	1,386.88	7.95	9.206	12.107	18.98	13.12
20.4	51.85	102.11	125.90	1,201.66	8.13	9.545	11.768	15.25	10.50
17.85	45.51	95.87	113.05	1,105.66	8.23	9.780	11.533	13.39	9.20
21 x 8 x 30.6	72.04	122.56	151.90	1,445.69	7.74	9.517	11.796	21.19	15.75
25.5	60.30	110.81	131.57	1,281.99	7.88	9.744	11.569	17.73	13.12
20.4	48.45	98.88	110.08	1,110.22	8.04	10.086	11.227	14.25	10.50
17.85	42.53	92.90	98.91	1,021.02	8.13	10.322	10.991	12.51	9.20
21 x 6 x 30.6	66.94	117.25	129.59	1,311.93	7.61	10.124	11.189	19.69	15.75
25.5	56.05	106.15	112.42	1,163.61	7.74	10.351	10.962	16.48	13.12
20.4	45.05	94.22	94.87	1,007.48	7.89	10.693	10.620	13.25	10.50
17.85	39.56	84.74	89.20	926.21	7.97	10.930	10.383	11.63	9.20
18 x 18 x 30.6	89.89	108.98	217.21	1,329.01	6.73	6.119	12.194	26.44	13.50
25.5	75.17	98.96	188.32	1,187.96	6.89	6.308	12.005	22.11	11.25
20.4	60.35	88.78	157.57	1,039.91	7.09	6.600	11.713	17.75	9.00
15.3	45.42	78.45	124.56	881.47	7.35	7.077	11.236	13.36	6.75
18 x 16 x 30.6	84.79	107.43	198.64	1,276.79	6.77	6.428	11.885	24.94	13.50
25.5	70.92	97.57	172.21	1,140.62	6.92	6.623	11.690	20.86	11.25
20.4	56.95	87.57	144.10	997.53	7.12	6.922	11.391	16.75	9.00
15.3	42.87	77.42	113.94	844.15	7.37	7.409	10.904	12.61	6.75
18 x 14 x 30.6	79.69	105.59	179.96	1,218.64	6.80	6.772	11.541	23.44	13.50
25.5	66.67	95.95	156.03	1,088.04	6.95	6.973	11.340	19.61	11.25
20.4	53.55	86.15	130.59	950.60	7.13	7.279	11.034	15.75	9.00
15.3	40.32	76.20	103.29	803.05	7.37	7.775	10.538	11.86	6.75
18 x 12 x 30.6	74.59	103.40	161.16	1,153.49	6.81	7.158	11.155	21.94	13.50
25.5	62.42	94.01	139.77	1,029.29	6.95	7.364	10.949	18.36	11.25
20.4	50.15	84.46	117.03	898.38	7.13	7.677	10.636	14.75	9.00
15.3	37.77	74.76	92.61	757.56	7.34	8.180	10.133	11.11	6.75
18 x 10 x 30.6	69.49	100.74	142.24	1,079.99	6.80	7.593	10.720	20.44	13.50
25.5	58.17	91.65	123.43	963.21	6.93	7.804	10.509	17.11	11.25
20.4	46.75	82.41	103.41	839.89	7.09	8.122	10.191	13.75	9.00
15.3	35.22	73.01	81.91	706.94	7.29	8.631	9.682	10.36	6.75

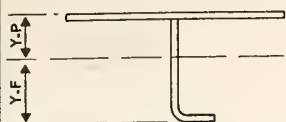


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 8 x 30.6	64.39	97.45	123.20	996.41	6.75	8.088	10.225	18.94	13.50
25.5	53.92	88.74	107.01	888.36	6.87	8.302	10.011	15.86	11.25
20.4	43.35	79.88	89.75	773.96	7.02	8.624	9.689	12.75	9.00
15.3	32.67	70.85	71.18	650.26	7.20	9.136	9.177	9.61	6.75
18 x 6 x 30.6	59.29	93.25	104.04	900.54	6.65	8.656	9.657	17.44	13.50
25.5	49.67	85.03	90.50	802.85	6.76	8.871	9.442	14.61	11.25
20.4	39.95	76.03	76.66	699.05	6.90	9.194	9.119	11.75	9.00
15.3	30.12	60.42	68.12	586.38	7.05	9.704	8.609	8.86	6.75
18 x 4 x 30.6	54.19	84.76	87.72	789.44	6.47	9.314	8.999	15.94	13.50
25.5	45.42	73.91	80.16	704.22	6.57	9.528	8.785	13.36	11.25
20.4	36.55	62.27	72.43	613.19	6.69	9.847	8.466	10.75	9.00
15.3	27.57	49.64	64.53	513.83	6.82	10.351	7.962	8.11	6.75
16 x 12 x 30.6	69.49	86.87	138.97	871.99	6.11	6.275	10.038	20.44	12.00
25.5	58.17	79.42	120.82	781.75	6.24	6.470	9.843	17.11	10.00
20.4	46.75	71.85	101.38	685.91	6.41	6.766	9.547	13.75	8.00
15.3	35.22	64.13	80.35	581.78	6.61	7.241	9.072	10.36	6.00
16 x 10 x 30.6	64.39	84.72	122.19	816.13	6.11	6.679	9.634	18.94	12.00
25.5	53.92	77.51	106.28	731.16	6.24	6.880	9.433	15.86	10.00
20.4	43.35	70.17	89.22	640.73	6.39	7.181	9.132	12.75	8.00
15.3	32.67	62.68	70.76	542.23	6.57	7.662	8.651	9.61	6.00
16 x 8 x 30.6	59.29	82.02	105.28	752.06	6.08	7.143	9.170	17.44	12.00
25.5	49.67	75.11	91.65	673.37	6.19	7.348	8.965	14.61	10.00
20.4	39.95	68.06	77.01	589.39	6.33	7.653	8.660	11.75	8.00
15.3	30.12	60.87	61.15	497.65	6.50	8.138	8.175	8.86	6.00
16 x 6 x 30.6	54.19	78.53	88.24	677.81	5.99	7.681	8.632	15.94	12.00
25.5	45.42	72.01	76.92	606.72	6.10	7.887	8.426	13.36	10.00
20.4	36.55	64.75	65.35	530.56	6.23	8.194	8.119	10.75	8.00
15.3	27.57	51.52	58.54	447.02	6.36	8.677	7.636	8.11	6.00
16 x 4 x 30.6	49.09	71.07	73.84	590.75	5.83	8.312	8.001	14.44	12.00
25.5	41.17	62.11	67.85	529.00	5.93	8.516	7.797	12.11	10.00
20.4	33.15	52.43	61.72	462.45	6.04	8.820	7.493	9.75	8.00
15.3	25.02	41.85	55.44	389.01	6.15	9.296	7.017	7.36	6.00
15 x 12 x 30.6	66.94	79.03	128.22	748.70	5.75	5.839	9.474	19.69	11.25
25.5	56.05	72.48	111.64	672.98	5.89	6.028	9.285	16.48	9.37
20.4	45.05	65.81	93.78	592.21	6.05	6.315	8.998	13.25	7.50
15.3	33.95	59.01	74.39	503.91	6.24	6.774	8.539	9.98	5.62
15 x 11 x 30.6	64.39	78.12	120.39	725.51	5.76	6.026	9.287	18.94	11.25
25.5	53.92	71.68	104.83	651.86	5.89	6.218	9.095	15.86	9.37
20.4	43.35	65.10	88.08	573.22	6.04	6.508	8.805	12.75	7.50
15.3	32.67	58.40	69.89	487.15	6.23	6.971	8.342	9.61	5.62
15 x 10 x 30.6	61.84	77.12	112.52	700.67	5.76	6.227	9.086	18.19	11.25
25.5	51.80	70.78	98.00	629.29	5.88	6.422	8.891	15.23	9.37
20.4	41.65	64.31	82.36	552.99	6.03	6.714	8.599	12.25	7.50
15.3	31.40	57.71	65.37	469.36	6.21	7.180	8.133	9.23	5.62
15 x 9 x 30.6	59.29	75.98	104.62	674.00	5.75	6.442	8.871	17.44	11.25
25.5	49.67	69.76	91.14	605.12	5.87	6.639	8.674	14.61	9.37
20.4	39.95	63.42	76.63	531.37	6.01	6.934	8.379	11.75	7.50
15.3	30.12	56.94	60.86	450.44	6.18	7.402	7.911	8.86	5.62
15 x 8 x 30.6	56.74	74.70	96.68	645.30	5.73	6.674	8.639	16.69	11.25
25.5	47.55	68.62	84.27	579.15	5.85	6.873	8.440	13.98	9.37
20.4	38.25	62.41	70.89	508.24	5.99	7.170	8.143	11.25	7.50
15.3	28.85	56.07	56.33	430.28	6.14	7.639	7.674	8.48	5.62



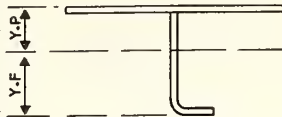
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	73.24	88.71	614.32	5.71	6.925	8.388	15.94	11.25
25.5	45.42	67.31	77.37	551.20	5.82	7.124	8.189	13.36	9.37
20.4	36.55	61.27	65.13	483.41	5.94	7.423	7.890	10.75	7.50
15.3	27.57	51.79	55.08	408.75	6.08	7.892	7.421	8.11	5.62
15 x 6 x 30.6	51.64	71.55	80.71	580.78	5.66	7.196	8.117	15.19	11.25
25.5	43.30	65.81	70.45	521.03	5.77	7.396	7.917	12.73	9.37
20.4	34.85	59.35	59.95	456.70	5.88	7.695	7.618	10.25	7.50
15.3	26.30	47.25	53.94	385.71	6.01	8.162	7.151	7.73	5.62
15 x 5 x 30.6	49.09	69.58	72.67	544.35	5.60	7.490	7.823	14.44	11.25
25.5	41.17	63.50	64.06	488.34	5.70	7.690	7.623	12.11	9.37
20.4	33.15	53.57	58.41	427.89	5.81	7.988	7.325	9.75	7.50
15.3	25.02	42.71	52.62	360.98	5.92	8.453	6.860	7.36	5.62
15 x 4 x 30.6	46.54	64.60	67.27	504.63	5.51	7.811	7.502	13.69	11.25
25.5	39.05	56.53	62.01	452.83	5.60	8.010	7.303	11.48	9.37
20.4	31.45	47.77	56.61	396.71	5.71	8.305	7.008	9.25	7.50
15.3	23.75	38.15	51.07	334.39	5.81	8.765	6.548	6.98	5.62
14 x 10 x 30.6	59.29	69.79	103.08	595.66	5.41	5.778	8.535	17.44	10.50
25.5	49.67	64.27	89.91	536.45	5.53	5.966	8.347	14.61	8.75
20.4	39.95	58.63	75.66	472.81	5.67	6.249	8.064	11.75	7.00
15.3	30.12	52.87	60.11	402.58	5.84	6.698	7.615	8.86	5.25
14 x 9 x 30.6	56.74	68.79	95.72	572.89	5.40	5.985	8.328	16.69	10.50
25.5	47.55	63.37	83.51	515.71	5.52	6.175	8.138	13.98	8.75
20.4	38.25	57.84	70.30	454.17	5.66	6.461	7.852	11.25	7.00
15.3	28.85	52.17	55.87	386.16	5.81	6.912	7.401	8.48	5.25
14 x 8 x 30.6	54.19	67.65	88.33	548.31	5.39	6.208	8.105	15.94	10.50
25.5	45.42	62.35	77.09	493.38	5.50	6.400	7.913	13.36	8.75
20.4	36.55	56.94	64.92	434.17	5.63	6.687	7.626	10.75	7.00
15.3	27.57	51.39	51.63	368.63	5.78	7.140	7.173	8.11	5.25
14 x 7 x 30.6	51.64	66.34	80.89	521.70	5.37	6.449	7.864	15.19	10.50
25.5	43.30	61.18	70.64	469.28	5.47	6.643	7.670	12.73	8.75
20.4	34.85	55.90	59.53	412.65	5.59	6.932	7.381	10.25	7.00
15.3	26.30	47.38	50.49	349.86	5.73	7.384	6.929	7.73	5.25
14 x 6 x 30.6	49.09	64.83	73.43	492.80	5.33	6.711	7.602	14.44	10.50
25.5	41.17	59.83	64.17	443.17	5.43	6.906	7.407	12.11	8.75
20.4	33.15	54.13	54.71	389.44	5.54	7.195	7.118	9.75	7.00
15.3	25.02	43.12	49.46	329.72	5.66	7.646	6.667	7.36	5.25
14 x 5 x 30.6	46.54	63.06	65.93	461.30	5.27	6.997	7.316	13.69	10.50
25.5	39.05	57.68	58.25	414.80	5.36	7.192	7.121	11.48	8.75
20.4	31.45	48.71	53.32	364.32	5.47	7.480	6.833	9.25	7.00
15.3	23.75	38.86	48.25	308.07	5.57	7.928	6.385	6.98	5.25
14 x 4 x 30.6	43.99	58.39	60.95	426.82	5.19	7.310	7.003	12.94	10.50
25.5	36.92	51.16	56.37	383.86	5.27	7.503	6.810	10.86	8.75
20.4	29.75	43.27	51.67	337.06	5.37	7.789	6.524	8.75	7.00
15.3	22.47	34.58	46.82	284.71	5.46	8.232	6.081	6.61	5.25
13 x 9 x 30.6	54.19	61.87	87.06	481.51	5.05	5.531	7.782	15.94	9.75
25.5	45.42	57.21	76.08	434.71	5.16	5.714	7.599	13.36	8.12
20.4	36.55	52.43	64.13	384.03	5.30	5.989	7.324	10.75	6.50
15.3	27.57	47.54	51.01	327.59	5.45	6.422	6.891	8.11	4.87
13 x 8 x 30.6	51.64	60.87	80.21	460.71	5.04	5.744	7.569	15.19	9.75
25.5	43.30	56.31	70.11	415.73	5.15	5.930	7.383	12.73	8.12
20.4	34.85	51.63	59.12	366.93	5.27	6.206	7.107	10.25	6.50
15.3	26.30	46.84	47.05	312.49	5.41	6.641	6.672	7.73	4.87



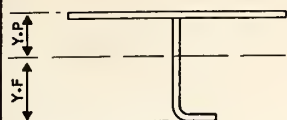
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
13 x 7 x 30.6	49.09	59.71	73.32	438.13	5.02	5.976	7.337	14.44	9.75
25.5	41.17	55.27	64.12	395.17	5.12	6.163	7.150	12.11	8.12
20.4	33.15	50.71	54.10	348.48	5.24	6.441	6.872	9.75	6.50
15.3	25.02	43.09	46.03	296.30	5.36	6.876	6.437	7.36	4.87
13 x 6 x 30.6	46.54	58.37	66.39	413.50	4.99	6.228	7.085	13.69	9.75
25.5	39.05	54.06	58.11	372.83	5.08	6.416	6.897	11.48	8.12
20.4	31.45	49.07	49.64	328.52	5.19	6.695	6.618	9.25	6.50
15.3	23.75	39.12	45.10	278.88	5.30	7.129	6.184	6.98	4.87
13 x 5 x 30.6	43.99	56.78	59.42	386.56	4.93	6.505	6.808	12.94	9.75
25.5	36.92	52.07	52.64	348.47	5.03	6.693	6.620	10.86	8.12
20.4	29.75	44.02	48.38	306.85	5.12	6.971	6.342	8.75	6.50
15.3	22.47	35.14	44.00	260.10	5.22	7.402	5.911	6.61	4.87
13 x 4 x 30.6	41.44	52.42	54.88	356.94	4.86	6.809	6.504	12.19	9.75
25.5	34.80	46.00	50.94	321.80	4.94	6.996	6.317	10.23	8.12
20.4	28.05	38.95	46.88	283.25	5.03	7.271	6.042	8.25	6.50
15.3	21.20	31.15	42.69	239.78	5.11	7.697	5.616	6.23	4.87
12 x 9 x 30.6	51.64	55.23	78.63	399.48	4.69	5.080	7.233	15.19	9.00
25.5	43.30	51.27	68.84	361.81	4.80	5.256	7.057	12.73	7.50
20.4	34.85	47.21	58.11	320.72	4.93	5.519	6.794	10.25	6.00
15.3	26.30	43.03	46.27	274.53	5.07	5.933	6.380	7.73	4.50
12 x 8 x 30.6	49.09	54.36	72.33	382.13	4.69	5.283	7.030	14.44	9.00
25.5	41.17	50.48	63.33	345.88	4.79	5.461	6.852	12.11	7.50
20.4	33.15	46.50	53.48	306.28	4.91	5.727	6.586	9.75	6.00
15.3	25.02	42.41	42.60	261.70	5.04	6.143	6.170	7.36	4.50
12 x 7 x 30.6	46.54	53.35	65.98	363.21	4.67	5.505	6.808	13.69	9.00
25.5	39.05	49.57	57.80	328.58	4.77	5.685	6.628	11.48	7.50
20.4	31.45	45.69	48.84	290.66	4.88	5.952	6.361	9.25	6.00
15.3	23.75	38.93	41.69	247.89	5.00	6.368	5.945	6.98	4.50
12 x 6 x 30.6	43.99	52.16	59.60	342.50	4.64	5.747	6.566	12.94	9.00
25.5	36.92	48.50	52.24	309.70	4.74	5.928	6.385	10.86	7.50
20.4	29.75	44.18	44.74	273.70	4.84	6.195	6.118	8.75	6.00
15.3	22.47	35.25	40.86	233.00	4.94	6.610	5.703	6.61	4.50
12 x 5 x 30.6	41.44	50.76	53.17	319.75	4.60	6.014	6.299	12.19	9.00
25.5	34.80	46.66	47.24	289.04	4.68	6.194	6.119	10.23	7.50
20.4	28.05	39.50	43.61	255.22	4.78	6.461	5.852	8.25	6.00
15.3	21.20	31.56	39.87	216.89	4.86	6.873	5.440	6.23	4.50
12 x 4 x 30.6	38.89	46.71	49.06	294.63	4.53	6.308	6.005	11.44	9.00
25.5	32.67	41.05	45.72	266.32	4.61	6.487	5.826	9.61	7.50
20.4	26.35	34.81	42.26	235.02	4.69	6.752	5.561	7.75	6.00
15.3	19.92	27.86	38.68	199.41	4.76	7.158	5.155	5.86	4.50
11 x 8 x 25.5	39.05	44.88	56.75	283.53	4.43	4.996	6.317	11.48	6.87
22.95	35.29	43.24	52.52	268.30	4.49	5.108	6.205	10.38	6.19
20.4	31.45	41.55	48.00	251.96	4.55	5.249	6.064	9.25	5.50
17.85	27.64	39.86	43.31	234.82	4.61	5.422	5.891	8.13	4.82
15.3	23.75	38.11	38.28	216.05	4.67	5.644	5.669	6.98	4.12
11 x 7 x 25.5	36.92	44.09	51.68	269.18	4.42	5.208	6.105	10.86	6.87
22.95	33.38	42.49	47.84	254.59	4.47	5.322	5.991	9.82	6.19
20.4	29.75	40.84	43.74	238.92	4.52	5.463	5.850	8.75	5.50
17.85	26.15	39.19	39.47	222.47	4.57	5.636	5.677	7.69	4.82
15.3	22.47	34.90	37.48	204.44	4.63	5.858	5.455	6.61	4.12
11 x 6 x 25.5	34.80	43.16	46.59	253.47	4.39	5.441	5.872	10.23	6.87
22.95	31.46	41.61	43.14	239.61	4.43	5.554	5.759	9.25	6.19
20.4	28.05	39.45	40.01	224.72	4.48	5.696	5.617	8.25	5.50



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

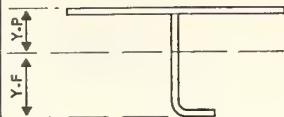
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12.75# PLATE WEIGHT

STEEL

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
11 x 6 x 17.85.....	24.66	35.62	38.40	209.06	4.53	5.869	5.444	7.25	4.82
15.3.....	21.20	31.51	36.74	191.88	4.57	6.090	5.223	6.23	4.12
11 x 5 x 25.5.....	32.67	41.47	42.05	236.19	4.34	5.696	5.617	9.61	6.87
22.95.....	29.55	38.42	40.55	223.19	4.38	5.810	5.503	8.69	6.19
20.4.....	26.35	35.15	39.01	209.18	4.42	5.951	5.362	7.75	5.50
17.85.....	23.17	31.76	37.46	194.45	4.47	6.123	5.190	6.82	4.82
15.3.....	19.92	28.11	35.86	178.25	4.50	6.342	4.971	5.86	4.12
11 x 4 x 25.5.....	30.55	36.32	40.70	217.11	4.27	5.978	5.335	8.98	6.87
22.95.....	27.64	33.67	39.27	205.09	4.31	6.091	5.222	8.13	6.19
20.4.....	24.65	30.84	37.80	192.13	4.34	6.230	5.083	7.25	5.50
17.85.....	21.69	27.88	36.32	178.46	4.38	6.400	4.913	6.38	4.82
15.3.....	18.65	24.70	34.79	163.41	4.41	6.616	4.697	5.48	4.12
10 x 8 x 25.5.....	36.92	39.51	50.36	228.35	4.07	4.534	5.779	10.86	6.25
22.95.....	33.38	38.16	46.66	216.50	4.12	4.640	5.673	9.82	5.63
20.4.....	29.75	36.77	42.68	203.72	4.18	4.773	5.540	8.75	5.00
17.85.....	26.15	35.38	38.54	190.24	4.23	4.936	5.377	7.69	4.38
15.3.....	22.47	33.94	34.08	175.36	4.29	5.146	5.167	6.61	3.75
10 x 7 x 25.5.....	34.80	38.84	45.77	216.66	4.06	4.734	5.579	10.23	6.25
22.95.....	31.46	37.52	42.40	205.30	4.10	4.841	5.472	9.25	5.63
20.4.....	28.05	36.16	38.80	193.02	4.15	4.975	5.338	8.25	5.00
17.85.....	24.66	34.80	35.04	180.06	4.20	5.139	5.174	7.25	4.38
15.3.....	21.20	30.99	33.39	165.76	4.25	5.348	4.965	6.23	3.75
10 x 6 x 25.5.....	32.67	38.03	41.14	203.81	4.03	4.954	5.359	9.61	6.25
22.95.....	29.55	36.76	38.13	193.01	4.07	5.062	5.251	8.69	5.63
20.4.....	26.35	34.90	35.44	181.33	4.12	5.196	5.117	7.75	5.00
17.85.....	23.17	31.53	34.11	168.98	4.16	5.360	4.953	6.82	4.38
15.3.....	19.92	27.90	32.74	155.34	4.20	5.568	4.745	5.86	3.75
10 x 5 x 25.5.....	30.55	36.48	37.07	189.62	3.99	5.198	5.115	8.98	6.25
22.95.....	27.64	33.83	35.84	179.47	4.03	5.305	5.008	8.13	5.63
20.4.....	24.65	30.98	34.57	168.48	4.07	5.439	4.874	7.25	5.00
17.85.....	21.69	28.00	33.29	156.85	4.10	5.601	4.712	6.38	4.38
15.3.....	18.65	24.79	31.96	143.99	4.14	5.808	4.505	5.48	3.75
10 x 4 x 25.5.....	28.42	31.79	35.88	173.86	3.92	5.468	4.845	8.36	6.25
22.95.....	25.72	29.51	34.72	164.49	3.96	5.575	4.738	7.57	5.63
20.4.....	22.95	27.04	33.50	154.32	3.99	5.707	4.606	6.75	5.00
17.85.....	20.20	24.46	32.28	143.53	4.02	5.867	4.446	5.94	4.38
15.3.....	17.37	21.68	31.01	131.59	4.04	6.070	4.243	5.11	3.75
9 x 6 x 25.5.....	30.55	33.12	35.89	160.43	3.67	4.470	4.843	8.98	5.62
20.4.....	24.65	30.51	31.04	143.28	3.75	4.697	4.616	7.25	4.50
15.3.....	18.65	24.42	28.86	123.19	3.82	5.045	4.268	5.48	3.37
10.2.....	12.54	17.48	26.55	98.16	3.85	5.615	3.698	3.69	2.25
9 x 5 x 25.5.....	28.42	31.71	32.30	149.01	3.63	4.700	4.613	8.36	5.62
20.4.....	22.95	26.97	30.29	132.88	3.70	4.926	4.387	6.75	4.50
15.3.....	17.37	21.61	28.18	113.92	3.76	5.271	4.042	5.11	3.37
10.2.....	11.69	15.49	25.94	90.32	3.76	5.831	3.482	3.44	2.25
9 x 4 x 25.5*.....	26.30	27.49	31.28	136.25	3.57	4.957	4.356	7.73	5.62
20.4*.....	21.25	23.42	29.36	121.34	3.63	5.181	4.132	6.25	4.50
15.3.....	16.10	18.80	27.35	103.76	3.68	5.519	3.794	4.73	3.37
10.2.....	10.84	13.50	25.19	81.85	3.66	6.064	3.249	3.19	2.25
8 x 6 x 25.5*.....	28.42	28.43	30.85	122.99	3.30	3.987	4.326	8.36	5.00
20.4*.....	22.95	26.29	26.81	110.33	3.37	4.197	4.116	6.75	4.00
15.3.....	17.37	21.08	25.10	95.24	3.44	4.519	3.794	5.11	3.00
10.2.....	11.69	15.09	23.26	76.09	3.46	5.042	3.271	3.44	2.00

*Indicates similarity to (L) shape.



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

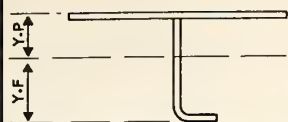
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STEEL

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
8 x 5 x 25.5	26.30	27.14	27.74	114.04	3.27	4.202	4.111	7.73	5.00
20.4	21.25	23.14	26.18	102.11	3.33	4.412	3.901	6.25	4.00
15.3	16.10	18.57	24.52	87.85	3.38	4.730	3.583	4.73	3.00
10.2	10.84	13.32	22.73	69.80	3.38	5.242	3.071	3.19	2.00
8 x 4 x 25.5*	24.17	23.40	26.87	103.98	3.22	4.444	3.869	7.11	5.00
20.4*	19.55	19.98	25.38	92.94	3.27	4.652	3.661	5.75	4.00
15.3	14.82	16.06	23.80	79.71	3.31	4.964	3.349	4.36	3.00
10.2	9.99	11.53	22.07	62.98	3.27	5.460	2.853	2.94	2.00

*Indicates similarity to (L) shape.



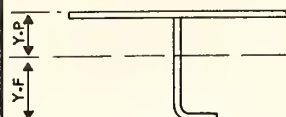
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ⁴
21 x 20 x 30.6	102.64	150.53	290.12	2,115.37	7.92	7.291	14.053	30.19	15.75
25.5	85.80	136.78	250.88	1,889.40	8.10	7.531	13.813	25.23	13.12
20.4	68.85	122.86	209.38	1,652.59	8.33	7.893	13.451	20.25	10.50
17.85	60.40	115.88	187.80	1,529.58	8.47	8.145	13.199	17.77	9.20
21 x 18 x 30.6	97.54	148.59	267.99	2,040.21	7.96	7.613	13.731	28.69	15.75
25.5	81.55	135.06	231.75	1,821.27	8.13	7.859	13.485	23.98	13.12
20.4	65.45	121.35	193.43	1,591.59	8.36	8.228	13.116	19.25	10.50
17.85	57.43	114.48	173.52	1,472.18	8.49	8.484	12.860	16.89	9.20
21 x 16 x 30.6	92.44	146.34	245.75	1,957.72	7.98	7.966	13.378	27.19	15.75
25.5	77.30	133.06	212.55	1,746.66	8.15	8.218	13.126	22.73	13.12
20.4	62.05	119.61	177.45	1,525.00	8.36	8.594	12.750	18.25	10.50
17.85	54.45	112.87	159.20	1,409.64	8.49	8.854	12.490	16.01	9.20
21 x 14 x 30.6	87.34	143.73	223.41	1,866.78	7.99	8.356	12.988	25.69	15.75
25.5	73.05	130.74	193.28	1,664.60	8.15	8.612	12.732	21.48	13.12
20.4	58.65	117.58	161.42	1,452.01	8.36	8.995	12.349	17.25	10.50
17.85	51.47	110.99	144.85	1,341.24	8.47	9.259	12.085	15.14	9.20
21 x 12 x 30.6	82.24	140.64	200.97	1,766.00	7.98	8.787	12.557	24.19	15.75
25.5	68.80	128.01	173.94	1,573.93	8.13	9.049	12.295	20.23	13.12
20.4	55.25	115.20	145.35	1,371.65	8.32	9.437	11.907	16.25	10.50
17.85	48.49	108.77	130.47	1,266.12	8.43	9.704	11.640	14.26	9.20
21 x 10 x 30.6	77.14	136.95	178.43	1,653.71	7.94	9.268	12.076	22.69	15.75
25.5	64.55	124.73	154.53	1,473.20	8.09	9.533	11.811	18.98	13.12
20.4	51.85	112.34	129.23	1,282.74	8.26	9.926	11.418	15.25	10.50
17.85	45.51	106.12	116.06	1,183.22	8.36	10.195	11.149	13.39	9.20
21 x 8 x 30.6	72.04	132.43	155.78	1,527.81	7.86	9.808	11.536	21.19	15.75
25.5	60.30	120.74	135.06	1,360.64	8.00	10.075	11.269	17.73	13.12
20.4	48.45	108.86	113.08	1,183.84	8.16	10.469	10.875	14.25	10.50
17.85	42.53	101.62	102.90	1,091.28	8.24	10.739	10.605	12.51	9.20
21 x 6 x 30.6	66.94	126.81	133.02	1,385.66	7.72	10.417	10.927	19.69	15.75
25.5	56.05	115.51	115.76	1,234.04	7.85	10.684	10.660	16.48	13.12
20.4	45.05	96.88	104.53	1,073.17	7.99	11.078	10.266	13.25	10.50
17.85	39.56	87.15	98.89	988.73	8.07	11.346	9.998	11.63	9.20
18 x 18 x 30.6	89.89	118.32	222.62	1,417.19	6.87	6.366	11.978	26.44	13.50
25.5	75.17	108.34	193.10	1,273.10	7.04	6.593	11.751	22.11	11.25
20.4	60.35	98.21	161.59	1,120.55	7.25	6.934	11.410	17.75	9.00
15.3	45.42	87.92	127.67	955.07	7.52	7.481	10.863	13.36	6.75
18 x 16 x 30.6	84.79	116.65	203.61	1,360.45	6.91	6.682	11.662	24.94	13.50
25.5	70.92	106.85	176.61	1,221.23	7.07	6.915	11.429	20.86	11.25
20.4	56.95	96.90	147.81	1,073.65	7.27	7.264	11.080	16.75	9.00
15.3	42.87	86.78	116.80	913.31	7.52	7.819	10.525	12.61	6.75
18 x 14 x 30.6	79.69	114.69	184.50	1,297.40	6.93	7.032	11.312	23.44	13.50
25.5	66.67	105.10	160.05	1,163.76	7.09	7.271	11.073	19.61	11.25
20.4	53.55	95.35	133.98	1,021.89	7.28	7.627	10.717	15.75	9.00
15.3	40.32	85.44	105.91	867.50	7.50	8.191	10.153	11.86	6.75
18 x 12 x 30.6	74.59	112.36	165.27	1,226.94	6.94	7.424	10.920	21.94	13.50
25.5	62.42	103.01	143.42	1,099.74	7.09	7.668	10.676	18.36	11.25
20.4	50.15	93.51	120.10	964.47	7.26	8.030	10.314	14.75	9.00
15.3	37.77	83.85	95.00	816.99	7.47	8.600	9.744	11.11	6.75
18 x 10 x 30.6	69.49	109.52	145.93	1,147.68	6.92	7.865	10.479	20.44	13.50
25.5	58.17	100.48	126.71	1,027.98	7.05	8.113	10.231	17.11	11.25
20.4	46.75	91.28	106.18	900.42	7.21	8.480	9.864	13.75	9.00
15.3	35.22	81.92	84.06	761.04	7.40	9.054	9.290	10.36	6.75



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 8 x 30.6	64.39	106.00	126.47	1,057.85	6.86	8.364	9.980	18.94	13.50
25.5	53.92	97.34	109.92	946.98	6.99	8.616	9.728	15.86	11.25
20.4	43.35	88.52	92.21	828.51	7.13	8.985	9.359	12.75	9.00
15.3	32.67	73.09	79.54	698.71	7.29	9.559	8.785	9.61	6.75
18 x 6 x 30.6	59.29	101.52	106.90	955.20	6.75	8.935	9.409	17.44	13.50
25.5	49.67	93.05	93.35	854.83	6.86	9.187	9.157	14.61	11.25
20.4	39.95	78.19	85.02	747.20	6.99	9.556	8.788	11.75	9.00
15.3	30.12	62.10	76.52	628.84	7.12	10.126	8.218	8.86	6.75
18 x 4 x 30.6	54.19	87.21	95.63	836.75	6.55	9.594	8.750	15.94	13.50
25.5	45.42	76.10	88.12	749.06	6.66	9.843	8.501	13.36	11.25
20.4	36.55	64.13	80.43	654.52	6.77	10.207	8.137	10.75	9.00
15.3	27.57	51.09	72.57	549.99	6.87	10.765	7.579	8.11	6.75
16 x 12 x 30.6	69.49	94.89	142.64	931.30	6.23	6.529	9.815	20.44	12.00
25.5	58.17	87.49	124.04	838.51	6.37	6.760	9.584	17.11	10.00
20.4	46.75	79.95	104.06	738.98	6.54	7.101	9.243	13.75	8.00
15.3	35.22	72.27	82.39	629.23	6.73	7.637	8.707	10.36	6.00
16 x 10 x 30.6	64.39	92.58	125.46	870.63	6.22	6.940	9.404	18.94	12.00
25.5	53.92	85.41	109.15	783.16	6.35	7.175	9.169	15.86	10.00
20.4	43.35	78.11	91.62	689.14	6.50	7.522	8.822	12.75	8.00
15.3	32.67	70.66	72.59	585.23	6.67	8.062	8.282	9.61	6.00
16 x 8 x 30.6	59.29	89.68	108.15	801.30	6.18	7.409	8.935	17.44	12.00
25.5	49.67	82.81	94.18	720.20	6.30	7.647	8.697	14.61	10.00
20.4	39.95	75.81	79.13	632.78	6.43	7.997	8.347	11.75	8.00
15.3	30.12	62.77	68.65	535.91	6.57	8.538	7.806	8.86	6.00
16 x 6 x 30.6	54.19	85.93	90.73	721.30	6.08	7.950	8.394	15.94	12.00
25.5	45.42	79.12	79.46	647.94	6.19	8.190	8.154	13.36	10.00
20.4	36.55	66.58	72.84	568.54	6.31	8.539	7.805	10.75	8.00
15.3	27.57	52.92	66.07	480.24	6.42	9.075	7.269	8.11	6.00
16 x 4 x 30.6	49.09	73.17	80.90	627.98	5.91	8.582	7.762	14.44	12.00
25.5	41.17	63.97	74.96	564.14	6.00	8.819	7.525	12.11	10.00
20.4	33.15	53.99	68.88	494.65	6.10	9.162	7.182	9.75	8.00
15.3	25.02	43.05	62.62	416.93	6.18	9.686	6.658	7.36	6.00
15 x 12 x 30.6	66.94	86.58	131.67	801.44	5.87	6.087	9.257	19.69	11.25
25.5	56.05	80.08	114.64	723.40	6.01	6.310	9.034	16.48	9.37
20.4	45.05	73.45	96.27	639.26	6.17	6.640	8.704	13.25	7.50
15.3	33.95	66.67	76.27	545.87	6.35	7.157	8.187	9.98	5.62
15 x 11 x 30.6	64.39	85.60	123.64	776.12	5.87	6.277	9.067	18.94	11.25
25.5	53.92	79.20	107.67	700.18	6.01	6.503	8.841	15.86	9.37
20.4	43.35	72.66	90.43	618.21	6.16	6.836	8.508	12.75	7.50
15.3	32.67	65.99	71.66	527.13	6.33	7.356	7.988	9.61	5.62
15 x 10 x 30.6	61.84	84.52	115.58	749.06	5.87	6.481	8.863	18.19	11.25
25.5	51.80	78.22	100.67	675.41	6.00	6.709	8.635	15.23	9.37
20.4	41.65	71.79	84.58	595.82	6.14	7.045	8.299	12.25	7.50
15.3	31.40	65.22	67.05	507.29	6.30	7.566	7.778	9.23	5.62
15 x 9 x 30.6	59.29	83.29	107.48	720.06	5.86	6.699	8.645	17.44	11.25
25.5	49.67	77.12	93.65	648.93	5.98	6.929	8.415	14.61	9.37
20.4	39.95	70.81	78.71	571.97	6.11	7.267	8.077	11.75	7.50
15.3	30.12	62.43	64.36	486.25	6.26	7.789	7.555	8.86	5.62
15 x 8 x 30.6	56.74	81.91	99.36	688.92	5.83	6.934	8.410	16.69	11.25
25.5	47.55	75.88	86.61	620.58	5.95	7.165	8.179	13.98	9.37
20.4	38.25	69.71	72.83	546.51	6.08	7.504	7.840	11.25	7.50
15.3	28.85	57.80	63.39	463.91	6.21	8.026	7.318	8.48	5.62



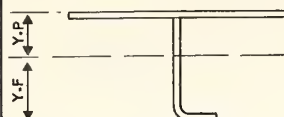
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	80.34	91.20	655.38	5.80	7.186	8.158	15.94	11.25
25.5	45.42	74.46	79.55	590.12	5.91	7.418	7.926	13.36	9.37
20.4	36.55	66.94	68.45	519.27	6.03	7.757	7.587	10.75	7.50
15.3	27.57	53.17	62.29	440.12	6.14	8.278	7.066	8.11	5.62
15 x 6 x 30.6	51.64	78.52	83.01	619.16	5.75	7.459	7.885	15.19	11.25
25.5	43.30	72.46	72.83	557.33	5.85	7.691	7.653	12.73	9.37
20.4	34.85	61.03	67.00	490.06	5.96	8.029	7.315	10.25	7.50
15.3	26.30	48.53	61.02	414.76	6.06	8.547	6.797	7.73	5.62
15 x 5 x 30.6	49.09	74.79	76.41	579.92	5.68	7.754	7.590	14.44	11.25
25.5	41.17	65.36	70.93	521.92	5.77	7.986	7.358	12.11	9.37
20.4	33.15	55.11	65.32	458.65	5.87	8.322	7.022	9.75	7.50
15.3	25.02	43.88	59.55	387.65	5.96	8.834	6.510	7.36	5.62
15 x 4 x 30.6	46.54	66.53	73.91	537.27	5.58	8.075	7.269	13.69	11.25
25.5	39.05	58.23	68.70	483.57	5.67	8.305	7.039	11.48	9.37
20.4	31.45	49.18	63.34	424.79	5.76	8.637	6.707	9.25	7.50
15.3	23.75	39.23	57.82	358.61	5.83	9.142	6.202	6.98	5.62
14 x 10 x 30.6	59.29	76.73	105.93	638.27	5.51	6.025	8.319	17.44	10.50
25.5	49.67	71.25	92.39	577.00	5.64	6.245	8.099	14.61	8.75
20.4	39.95	65.65	77.70	510.39	5.78	6.569	7.775	11.75	7.00
15.3	30.12	59.91	61.63	435.74	5.93	7.070	7.274	8.86	5.25
14 x 9 x 30.6	56.74	75.64	98.38	613.40	5.51	6.235	8.109	16.69	10.50
25.5	47.55	70.27	85.83	554.19	5.62	6.457	7.887	13.98	8.75
20.4	38.25	64.77	72.21	489.74	5.75	6.783	7.561	11.25	7.00
15.3	28.85	57.30	59.13	417.42	5.89	7.285	7.059	8.48	5.25
14 x 8 x 30.6	54.19	74.41	90.80	586.62	5.49	6.460	7.884	15.94	10.50
25.5	45.42	69.15	79.25	529.70	5.60	6.684	7.660	13.36	8.75
20.4	36.55	63.77	66.70	467.65	5.72	7.011	7.333	10.75	7.00
15.3	27.57	52.96	58.25	397.92	5.84	7.513	6.831	8.11	5.25
14 x 7 x 30.6	51.64	73.00	83.19	557.70	5.46	6.704	7.640	15.19	10.50
25.5	43.30	67.88	72.65	503.33	5.56	6.929	7.415	12.73	8.75
20.4	34.85	61.18	62.63	443.95	5.67	7.256	7.088	10.25	7.00
15.3	26.30	48.62	57.25	377.12	5.78	7.756	6.588	7.73	5.25
14 x 6 x 30.6	49.09	71.36	75.54	526.37	5.41	6.968	7.376	14.44	10.50
25.5	41.17	66.02	66.40	474.86	5.51	7.193	7.151	12.11	8.75
20.4	33.15	55.65	61.32	418.48	5.61	7.519	6.825	9.75	7.00
15.3	25.02	44.27	56.09	354.89	5.70	8.017	6.327	7.36	5.25
14 x 5 x 30.6	46.54	67.86	69.45	492.32	5.34	7.255	7.089	13.69	10.50
25.5	39.05	59.37	64.68	444.03	5.43	7.479	6.865	11.48	8.75
20.4	31.45	50.11	59.78	391.01	5.53	7.803	6.541	9.25	7.00
15.3	23.75	39.91	54.74	331.09	5.61	8.295	6.049	6.98	5.25
14 x 4 x 30.6	43.99	60.15	67.17	455.17	5.25	7.568	6.776	12.94	10.50
25.5	36.92	52.70	62.63	410.52	5.34	7.790	6.554	10.86	8.75
20.4	29.75	44.55	57.96	361.32	5.42	8.110	6.234	8.75	7.00
15.3	22.47	35.55	53.14	305.52	5.48	8.595	5.749	6.61	5.25
13 x 9 x 30.6	54.19	68.26	89.52	516.81	5.15	5.773	7.571	15.94	9.75
25.5	45.42	63.64	78.20	468.19	5.26	5.987	7.357	13.36	8.12
20.4	36.55	58.90	65.86	414.90	5.39	6.299	7.045	10.75	6.50
15.3	27.57	52.30	54.02	354.60	5.52	6.780	6.564	8.11	4.87
13 x 8 x 30.6	51.64	67.17	82.49	494.04	5.13	5.989	7.355	15.19	9.75
25.5	43.30	62.65	72.09	447.27	5.24	6.205	7.139	12.73	8.12
20.4	34.85	58.01	60.74	395.92	5.36	6.519	6.825	10.25	6.50
15.3	26.30	48.25	53.24	337.75	5.47	6.999	6.345	7.73	4.87



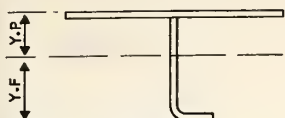
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
13 x 7 x 30.6	49.09	65.92	75.43	469.38	5.11	6.223	7.121	14.44	9.75
25.5	41.17	61.51	65.95	424.69	5.21	6.440	6.904	12.11	8.12
20.4	33.15	55.60	56.99	375.53	5.31	6.754	6.590	9.75	6.50
15.3	25.02	44.20	52.33	319.75	5.41	7.234	6.110	7.36	4.87
13 x 6 x 30.6	46.54	64.46	68.32	442.58	5.07	6.478	6.866	13.69	9.75
25.5	39.05	59.78	60.19	400.23	5.16	6.694	6.650	11.48	8.12
20.4	31.45	50.44	55.80	353.54	5.26	7.008	6.336	9.25	6.50
15.3	23.75	40.14	51.28	300.46	5.34	7.484	5.860	6.98	4.87
13 x 5 x 30.6	43.99	61.19	62.73	413.34	5.01	6.755	6.589	12.94	9.75
25.5	36.92	53.60	58.63	373.64	5.09	6.971	6.373	10.86	8.12
20.4	29.75	45.28	54.41	329.76	5.18	7.283	6.061	8.75	6.50
15.3	22.47	36.08	50.04	279.75	5.25	7.754	5.590	6.61	4.87
13 x 4 x 30.6	41.44	54.02	60.68	381.32	4.92	7.059	6.285	12.19	9.75
25.5	34.80	47.39	56.77	344.66	5.00	7.273	6.071	10.23	8.12
20.4	28.05	40.10	52.75	303.97	5.08	7.581	5.763	8.25	6.50
15.3	21.20	32.01	48.58	257.46	5.13	8.044	5.300	6.23	4.87
12 x 9 x 30.6	51.64	61.15	80.89	429.89	4.79	5.314	7.030	15.19	9.00
25.5	43.30	57.23	70.78	390.60	4.90	5.519	6.825	12.73	7.50
20.4	34.85	53.20	59.68	347.19	5.02	5.818	6.526	10.25	6.00
15.3	26.30	47.42	49.04	297.61	5.14	6.276	6.068	7.73	4.50
12 x 8 x 30.6	49.09	60.20	74.42	410.80	4.78	5.520	6.824	14.44	9.00
25.5	41.17	56.36	65.13	372.96	4.88	5.727	6.617	12.11	7.50
20.4	33.15	52.41	54.94	331.10	4.99	6.027	6.317	9.75	6.00
15.3	25.02	43.67	48.34	283.22	5.10	6.485	5.859	7.36	4.50
12 x 7 x 30.6	46.54	59.10	67.90	390.04	4.76	5.744	6.600	13.69	9.00
25.5	39.05	55.36	59.46	353.86	4.85	5.952	6.392	11.48	7.50
20.4	31.45	50.18	51.51	313.75	4.95	6.253	6.091	9.25	6.00
15.3	23.75	39.92	47.53	267.82	5.04	6.709	5.635	6.98	4.50
12 x 6 x 30.6	43.99	57.81	61.35	367.40	4.72	5.988	6.356	12.94	9.00
25.5	36.92	53.76	54.18	333.10	4.81	6.196	6.148	10.86	7.50
20.4	29.75	45.41	50.45	295.00	4.90	6.497	5.847	8.75	6.00
15.3	22.47	36.15	46.58	251.28	4.97	6.950	5.394	6.61	4.50
12 x 5 x 30.6	41.44	54.77	56.28	342.61	4.67	6.256	6.088	12.19	9.00
25.5	34.80	48.04	52.79	310.47	4.75	6.463	5.881	10.23	7.50
20.4	28.05	40.62	49.20	274.65	4.82	6.761	5.583	8.25	6.00
15.3	21.20	32.38	45.47	233.46	4.89	7.209	5.135	6.23	4.50
12 x 4 x 30.6	38.89	48.14	54.43	315.34	4.59	6.550	5.794	11.44	9.00
25.5	32.67	42.29	51.12	285.68	4.66	6.755	5.589	9.61	7.50
20.4	26.35	35.82	47.69	252.50	4.73	7.049	5.295	7.75	6.00
15.3	19.92	28.61	44.13	214.23	4.77	7.489	4.855	5.86	4.50
11 x 8 x 25.5	39.05	50.29	58.37	306.47	4.52	5.251	6.093	11.48	6.87
22.95	35.29	48.67	53.99	290.35	4.57	5.378	5.966	10.38	6.19
20.4	31.45	46.99	49.30	272.93	4.62	5.536	5.808	9.25	5.50
17.85	27.64	44.44	45.31	254.51	4.67	5.727	5.617	8.13	4.82
15.3	23.75	39.22	43.57	234.15	4.71	5.970	5.374	6.98	4.12
11 x 7 x 25.5	36.92	49.42	53.17	290.55	4.49	5.465	5.879	10.86	6.87
22.95	33.38	47.83	49.19	275.10	4.54	5.593	5.751	9.82	6.19
20.4	29.75	44.93	46.19	258.38	4.58	5.751	5.593	8.75	5.50
17.85	26.15	40.51	44.55	240.70	4.63	5.941	5.403	7.69	4.82
15.3	22.47	35.77	42.85	221.14	4.67	6.183	5.161	6.61	4.12
11 x 6 x 25.5	34.80	47.94	48.39	273.19	4.45	5.698	5.646	10.23	6.87
22.95	31.46	44.37	46.85	258.50	4.49	5.826	5.518	9.25	6.19
20.4	28.05	40.54	45.26	242.60	4.53	5.984	5.360	8.25	5.50



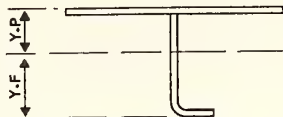
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
11 x 6 x 17.85	24.66	36.57	43.66	225.76	4.57	6.173	5.171	7.25	4.82
15.3	21.20	32.30	42.01	207.14	4.60	6.413	4.931	6.23	4.12
11 x 5 x 25.5	32.67	42.69	47.16	254.18	4.40	5.954	5.390	9.61	6.87
22.95	29.55	39.53	45.68	240.38	4.43	6.081	5.263	8.69	6.19
20.4	26.35	36.14	44.14	225.42	4.47	6.238	5.106	7.75	5.50
17.85	23.17	32.62	42.60	209.57	4.50	6.425	4.919	6.82	4.82
15.3	19.92	28.83	41.00	192.02	4.52	6.661	4.683	5.86	4.12
11 x 4 x 25.5	30.55	37.41	45.66	233.27	4.31	6.235	5.109	8.98	6.87
22.95	27.64	34.67	44.25	220.52	4.35	6.361	4.983	8.13	6.19
20.4	24.65	31.72	42.79	206.66	4.37	6.515	4.829	7.25	5.50
17.85	21.69	28.65	41.32	191.95	4.40	6.699	4.645	6.38	4.82
15.3	18.65	25.35	39.79	175.65	4.41	6.930	4.414	5.48	4.12
10 x 8 x 25.5	36.92	44.45	51.81	247.48	4.14	4.776	5.568	10.86	6.25
22.95	33.38	43.12	47.96	234.86	4.19	4.897	5.447	9.82	5.63
20.4	29.75	41.74	43.83	221.15	4.24	5.045	5.299	8.75	5.00
17.85	26.15	39.53	40.35	206.56	4.29	5.225	5.119	7.69	4.38
15.3	22.47	34.90	38.91	190.33	4.33	5.453	4.891	6.61	3.75
10 x 7 x 25.5	34.80	43.70	47.09	234.44	4.12	4.979	5.365	10.23	6.25
22.95	31.46	42.40	43.60	222.33	4.17	5.100	5.244	9.25	5.63
20.4	28.05	39.85	41.05	209.15	4.21	5.249	5.095	8.25	5.00
17.85	24.66	35.95	39.69	195.13	4.25	5.428	4.916	7.25	4.38
15.3	21.20	31.75	38.29	179.53	4.28	5.655	4.689	6.23	3.75
10 x 6 x 25.5	32.67	42.33	42.80	220.16	4.09	5.201	5.143	9.61	6.25
22.95	29.55	39.21	41.54	208.64	4.13	5.321	5.023	8.69	5.63
20.4	26.35	35.85	40.23	196.10	4.17	5.470	4.874	7.75	5.00
17.85	23.17	32.35	38.92	182.74	4.20	5.648	4.696	6.82	4.38
15.3	19.92	28.58	37.54	167.87	4.22	5.873	4.471	5.86	3.75
10 x 5 x 25.5	30.55	37.56	41.73	204.46	4.04	5.444	4.900	8.98	6.25
22.95	27.64	34.80	40.51	193.64	4.07	5.564	4.780	8.13	5.63
20.4	24.65	31.84	39.25	181.83	4.10	5.712	4.632	7.25	5.00
17.85	21.69	28.75	37.98	169.25	4.13	5.888	4.456	6.38	4.38
15.3	18.65	25.41	36.65	155.24	4.15	6.109	4.235	5.48	3.75
10 x 4 x 25.5	28.42	32.75	40.41	187.12	3.96	5.714	4.630	8.36	6.25
22.95	25.72	30.37	39.25	177.11	3.99	5.832	4.512	7.57	5.63
20.4	22.95	27.81	38.05	166.18	4.02	5.977	4.367	6.75	5.00
17.85	20.20	25.13	36.84	154.52	4.04	6.149	4.195	5.94	4.38
15.3	17.37	22.23	35.57	141.52	4.04	6.365	3.979	5.11	3.75
9 x 6 x 25.5	30.55	36.94	37.43	173.71	3.72	4.703	4.641	8.98	5.62
20.4	24.65	31.33	35.37	155.24	3.79	4.955	4.389	7.25	4.50
15.3	18.65	25.01	33.19	133.27	3.84	5.329	4.015	5.48	3.37
10.2	12.54	17.82	30.85	105.55	3.82	5.922	3.422	3.69	2.25
9 x 5 x 25.5	28.42	32.64	36.51	161.01	3.68	4.933	4.411	8.36	5.62
20.4	22.95	27.71	34.52	143.63	3.73	5.183	4.161	6.75	4.50
15.3	17.37	22.14	32.42	122.92	3.77	5.552	3.792	5.11	3.37
10.2	11.69	15.80	30.13	96.85	3.72	6.130	3.214	3.44	2.25
9 x 4 x 25.5*	26.30	28.31	35.36	146.91	3.61	5.189	4.155	7.73	5.62
20.4*	21.25	24.07	33.47	130.83	3.65	5.435	3.909	6.25	4.50
15.3	16.10	19.26	31.45	111.64	3.67	5.795	3.549	4.73	3.37
10.2	10.84	13.77	29.25	87.50	3.60	6.353	2.991	3.19	2.25
8 x 6 x 25.5*	28.42	31.75	32.27	133.53	3.35	4.206	4.138	8.36	5.00
20.4*	22.95	26.99	30.66	119.78	3.41	4.438	3.906	6.75	4.00
15.3	17.37	21.57	28.96	103.15	3.45	4.782	3.562	5.11	3.00
10.2	11.69	15.38	27.08	81.84	3.42	5.322	3.022	3.44	2.00

* Indicates similarity to (L) shape



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

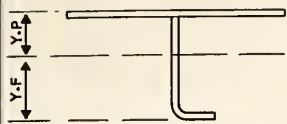
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STEEL

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
8 x 5 x 25.5	26.30	27.94	31.49	123.52	3.31	4.421	3.923	7.73	5.00
20.4	21.25	23.77	29.94	110.55	3.36	4.652	3.692	6.25	4.00
15.3	16.10	19.01	28.29	94.87	3.38	4.990	3.354	4.73	3.00
10.2	10.84	13.57	26.45	74.83	3.33	5.515	2.829	3.19	2.00
8 x 4 x 25.5*	24.17	24.09	30.51	112.33	3.25	4.662	3.682	7.11	5.00
20.4*	19.55	20.53	29.03	100.33	3.28	4.888	3.456	5.75	4.00
15.3	14.82	16.44	27.45	85.80	3.29	5.218	3.126	4.36	3.00
10.2	9.99	11.76	25.67	67.29	3.22	5.723	2.621	2.94	2.00

*Indicates similarity to (L) shape.



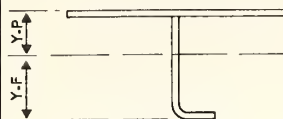
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	I	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 24 x 30.6	120.49	201.97	399.44	3,269.78	9.08	8.186	16.189	35.44	18.00
25.5	100.67	183.70	344.76	2,921.13	9.29	8.473	15.902	29.61	15.00
20.4	80.75	165.21	287.15	2,556.29	9.56	8.902	15.473	23.75	12.00
17.85	70.83	155.96	257.30	2,366.89	9.72	9.199	15.176	20.83	10.51
24 x 22 x 30.6	115.39	199.89	373.79	3,174.60	9.12	8.493	15.882	33.94	18.00
25.5	96.42	181.84	322.63	2,834.66	9.33	8.786	15.589	28.36	15.00
20.4	77.35	163.58	268.74	2,478.63	9.59	9.223	15.152	22.75	12.00
17.85	67.85	154.45	240.82	2,293.68	9.74	9.524	14.851	19.96	10.51
24 x 20 x 30.6	110.29	197.53	348.06	3,071.63	9.15	8.825	15.550	32.44	18.00
25.5	92.17	179.75	300.44	2,741.28	9.35	9.124	15.251	27.11	15.00
20.4	73.95	161.75	250.30	2,394.99	9.60	9.569	14.806	21.75	12.00
17.85	64.87	152.75	224.31	2,214.96	9.75	9.874	14.501	19.08	10.51
24 x 18 x 30.6	105.19	194.87	322.23	2,959.89	9.18	9.186	15.189	30.94	18.00
25.5	87.92	177.37	278.19	2,640.15	9.37	9.490	14.885	25.86	15.00
20.4	70.55	159.68	231.82	2,304.66	9.61	9.942	14.433	20.75	12.00
17.85	61.89	150.82	207.78	2,130.09	9.75	10.252	14.123	18.20	10.51
24 x 16 x 30.6	100.09	191.81	296.31	2,838.19	9.18	9.578	14.797	29.44	18.00
25.5	83.67	174.66	255.88	2,530.25	9.37	9.888	14.487	24.61	15.00
20.4	67.15	157.30	213.30	2,206.79	9.60	10.346	14.029	19.75	12.00
17.85	58.92	148.61	191.22	2,038.32	9.73	10.659	13.716	17.33	10.51
24 x 14 x 30.6	94.99	188.28	270.31	2,705.14	9.17	10.008	14.367	27.94	18.00
25.5	79.42	171.53	233.51	2,410.39	9.35	10.322	14.053	23.36	15.00
20.4	63.75	154.56	194.74	2,100.40	9.56	10.786	13.589	18.75	12.00
17.85	55.94	146.07	174.63	1,938.77	9.68	11.102	13.273	16.45	10.51
24 x 12 x 30.6	89.89	184.16	244.21	2,559.07	9.14	10.479	13.896	26.44	18.00
25.5	75.17	167.87	211.08	2,279.16	9.30	10.798	13.577	22.11	15.00
20.4	60.35	151.36	176.14	1,984.32	9.50	11.265	13.110	17.75	12.00
17.85	52.96	143.10	158.02	1,830.41	9.62	11.584	12.791	15.58	10.51
24 x 10 x 30.6	84.79	179.27	218.02	2,397.99	9.07	10.999	13.376	24.94	18.00
25.5	70.92	163.53	188.58	2,134.84	9.23	11.320	13.055	20.86	15.00
20.4	56.95	147.58	157.51	1,857.18	9.41	11.791	12.584	16.75	12.00
17.85	49.98	139.58	141.38	1,712.02	9.51	12.110	12.265	14.70	10.51
24 x 8 x 30.6	79.69	173.39	191.74	2,219.43	8.96	11.575	12.800	23.44	18.00
25.5	66.67	158.32	166.03	1,975.39	9.11	11.898	12.477	19.61	15.00
20.4	53.55	138.84	143.03	1,717.30	9.27	12.369	12.006	15.75	12.00
17.85	47.00	124.70	135.37	1,582.13	9.36	12.687	11.688	13.82	10.51
24 x 6 x 30.6	74.59	165.37	166.18	2,020.41	8.79	12.217	12.158	21.94	18.00
25.5	62.42	143.41	151.94	1,798.28	8.92	12.539	11.836	18.36	15.00
20.4	50.15	120.14	137.47	1,562.68	9.08	13.007	11.368	14.75	12.00
17.85	44.02	108.01	130.21	1,438.99	9.16	13.323	11.052	12.95	10.51
21 x 20 x 30.6	102.64	162.44	296.65	2,243.56	8.08	7.563	13.812	30.19	15.75
25.5	85.80	148.75	256.64	2,012.81	8.27	7.843	13.532	25.23	13.12
20.4	68.85	134.87	214.20	1,769.04	8.50	8.259	13.116	20.25	10.50
17.85	60.40	127.92	192.10	1,641.33	8.64	8.544	12.831	17.77	9.20
21 x 18 x 30.6	97.54	160.37	274.05	2,162.46	8.11	7.891	13.484	28.69	15.75
25.5	81.55	146.89	237.10	1,938.74	8.29	8.177	13.198	23.98	13.12
20.4	65.45	133.24	197.93	1,702.14	8.52	8.600	12.775	19.25	10.50
17.85	57.43	126.39	177.52	1,578.08	8.65	8.890	12.485	16.89	9.20
21 x 16 x 30.6	92.44	157.99	251.36	2,073.61	8.13	8.250	13.125	27.19	15.75
25.5	77.30	144.76	217.50	1,857.81	8.30	8.542	12.833	22.73	13.12
20.4	62.05	131.36	181.61	1,629.30	8.52	8.972	12.403	18.25	10.50
17.85	54.45	124.64	162.91	1,509.36	8.64	9.265	12.110	16.01	9.20



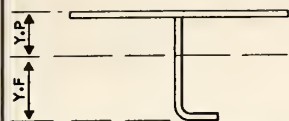
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 14 x 30.6	87.34	155.21	228.56	1,975.86	8.13	8.645	12.730	25.69	15.75
25.5	73.05	142.28	197.84	1,769.00	8.30	8.942	12.433	21.48	13.12
20.4	58.65	129.17	165.25	1,549.67	8.50	9.378	11.997	17.25	10.50
17.85	51.47	122.59	148.27	1,434.42	8.61	9.674	11.701	15.14	9.20
21 x 12 x 30.6	82.24	151.93	205.67	1,867.79	8.11	9.081	12.294	24.19	15.75
25.5	68.80	139.35	178.10	1,671.13	8.27	9.383	11.992	20.23	13.12
20.4	55.25	126.59	148.85	1,462.26	8.45	9.824	11.551	16.25	10.50
17.85	48.49	120.19	133.60	1,352.38	8.55	10.123	11.252	14.26	9.20
21 x 10 x 30.6	77.14	148.00	182.68	1,747.68	8.06	9.567	11.808	22.69	15.75
25.5	64.55	135.85	158.30	1,562.71	8.21	9.872	11.503	18.98	13.12
20.4	51.85	123.50	132.41	1,365.88	8.38	10.315	11.060	15.25	10.50
17.85	45.51	117.31	118.90	1,262.17	8.47	10.615	10.760	13.39	9.20
21 x 8 x 30.6	72.04	143.21	159.59	1,613.39	7.97	10.109	11.266	21.19	15.75
25.5	60.30	131.57	138.44	1,441.94	8.10	10.416	10.959	17.73	13.12
20.4	48.45	115.93	119.75	1,259.06	8.26	10.861	10.514	14.25	10.50
17.85	42.53	104.17	113.80	1,162.51	8.34	11.160	10.215	12.51	9.20
21 x 6 x 30.6	66.94	136.40	137.24	1,462.27	7.82	10.720	10.655	19.69	15.75
25.5	56.05	118.50	126.25	1,306.60	7.94	11.026	10.349	16.48	13.12
20.4	45.05	99.41	115.07	1,140.01	8.08	11.468	9.907	13.25	10.50
17.85	39.56	89.41	109.45	1,051.84	8.15	11.764	9.611	11.63	9.20
18 x 18 x 30.6	89.89	128.51	227.88	1,509.93	7.02	6.626	11.749	26.44	13.50
25.5	75.17	118.59	197.69	1,362.01	7.19	6.890	11.485	22.11	11.25
20.4	60.35	108.50	165.38	1,203.90	7.40	7.280	11.095	17.75	9.00
15.3	45.42	98.25	130.52	1,029.99	7.65	7.891	10.484	13.36	6.75
18 x 16 x 30.6	84.79	126.73	208.45	1,448.23	7.05	6.947	11.428	24.94	13.50
25.5	70.92	116.98	180.84	1,305.20	7.21	7.218	11.157	20.86	11.25
20.4	56.95	107.07	151.30	1,152.11	7.41	7.615	10.760	16.75	9.00
15.3	42.87	96.99	119.43	983.48	7.64	8.235	10.140	12.61	6.75
18 x 14 x 30.6	79.69	124.64	188.92	1,379.85	7.06	7.304	11.071	23.44	13.50
25.5	66.67	115.09	163.91	1,242.43	7.22	7.580	10.795	19.61	11.25
20.4	53.55	105.39	137.17	1,095.13	7.41	7.984	10.391	15.75	9.00
15.3	40.32	95.51	108.32	932.64	7.62	8.610	9.765	11.86	6.75
18 x 12 x 30.6	74.59	122.14	169.27	1,303.63	7.06	7.701	10.674	21.94	13.50
25.5	62.42	112.84	146.92	1,172.72	7.21	7.982	10.393	18.36	11.25
20.4	50.15	103.38	123.00	1,032.15	7.38	8.391	9.984	14.75	9.00
15.3	37.77	93.75	97.18	876.82	7.56	9.022	9.353	11.11	6.75
18 x 10 x 30.6	69.49	119.10	149.52	1,218.15	7.03	8.147	10.228	20.44	13.50
25.5	58.17	110.11	129.85	1,094.84	7.16	8.432	9.943	17.11	11.25
20.4	46.75	100.96	108.79	962.15	7.32	8.845	9.530	13.75	9.00
15.3	35.22	86.03	91.62	815.26	7.48	9.477	8.898	10.36	6.75
18 x 8 x 30.6	64.39	115.34	129.66	1,121.61	6.96	8.651	9.724	18.94	13.50
25.5	53.92	106.73	112.70	1,007.26	7.08	8.937	9.438	15.86	11.25
20.4	43.35	94.53	97.95	883.91	7.22	9.351	9.024	12.75	9.00
15.3	32.67	74.85	88.99	747.02	7.35	9.981	8.394	9.61	6.75
18 x 6 x 30.6	59.29	109.68	110.55	1,011.70	6.84	9.224	9.151	17.44	13.50
25.5	49.67	95.49	102.43	908.07	6.94	9.510	8.865	14.61	11.25
20.4	39.95	80.22	94.14	795.88	7.06	9.921	8.454	11.75	9.00
15.3	30.12	63.64	85.66	670.95	7.16	10.542	7.833	8.86	6.75
18 x 4 x 30.6	54.19	89.60	104.26	885.43	6.63	9.882	8.493	15.94	13.50
25.5	45.42	78.20	96.79	794.77	6.72	10.164	8.211	13.36	11.25
20.4	36.55	65.87	89.15	696.08	6.82	10.567	7.808	10.75	9.00
15.3	27.57	52.42	81.31	585.63	6.89	11.172	7.203	8.11	6.75



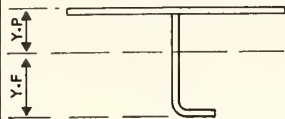
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	I	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ⁴
16 x 12 x 30.6	69.49	103.64	146.18	993.06	6.35	6.793	9.582	20.44	12.00
25.5	58.17	96.29	127.11	897.13	6.49	7.058	9.317	17.11	10.00
20.4	46.75	88.79	106.56	793.13	6.64	7.443	8.932	13.75	8.00
15.3	35.22	81.13	84.25	676.81	6.81	8.033	8.342	10.36	6.00
16 x 10 x 30.6	64.39	101.16	128.61	927.20	6.33	7.209	9.166	18.94	12.00
25.5	53.92	94.04	111.88	836.67	6.46	7.478	8.897	15.86	10.00
20.4	43.35	86.78	93.85	738.32	6.60	7.867	8.508	12.75	8.00
15.3	32.67	74.26	79.35	628.13	6.74	8.459	7.916	9.61	6.00
16 x 8 x 30.6	59.29	98.04	110.93	852.21	6.27	7.683	8.692	17.44	12.00
25.5	49.67	91.22	96.58	768.18	6.39	7.954	8.421	14.61	10.00
20.4	39.95	81.10	84.25	676.65	6.51	8.344	8.031	11.75	8.00
15.3	30.12	64.24	77.11	573.87	6.62	8.933	7.442	8.86	6.00
16 x 6 x 30.6	54.19	93.12	94.01	766.08	6.17	8.226	8.149	15.94	12.00
25.5	45.42	81.20	87.58	689.96	6.27	8.497	7.878	13.36	10.00
20.4	36.55	68.29	81.00	606.75	6.37	8.884	7.491	10.75	8.00
15.3	27.57	54.20	74.24	513.01	6.45	9.465	6.910	8.11	6.00
16 x 4 x 30.6	49.09	75.20	88.61	666.11	5.98	8.858	7.517	14.44	12.00
25.5	41.17	65.74	82.71	599.77	6.06	9.124	7.251	12.11	10.00
20.4	33.15	55.44	76.66	526.84	6.14	9.503	6.872	9.75	8.00
15.3	25.02	44.13	70.42	444.26	6.19	10.066	6.309	7.36	6.00
15 x 12 x 30.6	66.94	94.81	134.98	856.29	5.98	6.344	9.031	19.69	11.25
25.5	56.05	88.36	117.49	775.38	6.12	6.600	8.775	16.48	9.37
20.4	45.05	81.77	98.58	687.18	6.27	6.971	8.404	13.25	7.50
15.3	33.95	75.02	77.97	587.83	6.43	7.539	7.836	9.98	5.62
15 x 11 x 30.6	64.39	93.76	126.76	828.66	5.98	6.537	8.838	18.94	11.25
25.5	53.92	87.40	110.36	749.89	6.11	6.795	8.580	15.86	9.37
20.4	43.35	80.90	92.61	663.92	6.26	7.169	8.206	12.75	7.50
15.3	32.67	73.27	74.25	567.01	6.40	7.738	7.637	9.61	5.62
15 x 10 x 30.6	61.84	92.59	118.51	799.20	5.97	6.743	8.632	18.19	11.25
25.5	51.80	86.34	103.20	722.76	6.10	7.004	8.371	15.23	9.37
20.4	41.65	79.94	86.63	639.25	6.23	7.379	7.996	12.25	7.50
15.3	31.40	68.57	73.39	545.03	6.37	7.949	7.426	9.23	5.62
15 x 9 x 30.6	59.29	91.27	110.24	767.69	5.95	6.964	8.411	17.44	11.25
25.5	49.67	85.14	96.02	693.83	6.07	7.226	8.149	14.61	9.37
20.4	39.95	78.87	80.64	613.03	6.20	7.602	7.773	11.75	7.50
15.3	30.12	63.85	72.44	521.79	6.32	8.171	7.204	8.86	5.62
15 x 8 x 30.6	56.74	89.78	101.93	733.93	5.93	7.200	8.175	16.69	11.25
25.5	47.55	83.79	88.83	662.91	6.03	7.463	7.912	13.98	9.37
20.4	38.25	74.64	77.65	585.12	6.15	7.840	7.535	11.25	7.50
15.3	28.85	59.14	71.35	497.17	6.26	8.407	6.968	8.48	5.62
15 x 7 x 30.6	54.19	88.08	93.59	697.65	5.88	7.454	7.921	15.94	11.25
25.5	45.42	81.61	82.24	629.80	5.99	7.717	7.658	13.36	9.37
20.4	36.55	68.62	76.27	555.35	6.09	8.093	7.282	10.75	7.50
15.3	27.57	54.41	70.12	471.06	6.18	8.657	6.718	8.11	5.62
15 x 6 x 30.6	51.64	85.22	86.12	658.58	5.83	7.728	7.647	15.19	11.25
25.5	43.30	74.37	80.47	594.25	5.92	7.990	7.385	12.73	9.37
20.4	34.85	62.59	74.67	523.52	6.02	8.364	7.011	10.25	7.50
15.3	26.30	49.68	68.71	443.31	6.09	8.923	6.452	7.73	5.62
15 x 5 x 30.6	49.09	76.82	83.84	616.36	5.75	8.024	7.351	14.44	11.25
25.5	41.17	67.11	78.41	555.97	5.84	8.284	7.091	12.11	9.37
20.4	33.15	56.55	72.83	489.41	5.92	8.655	6.720	9.75	7.50
15.3	25.02	44.95	67.07	413.77	5.98	9.206	6.169	7.36	5.62



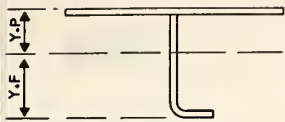
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 4 x 30.6	46.54	68.39	81.16	570.61	5.65	8.344	7.031	13.69	11.25
25.5	39.05	59.83	75.98	514.66	5.73	8.601	6.774	11.48	9.37
20.4	31.45	50.49	70.65	452.77	5.80	8.967	6.408	9.25	7.50
15.3	23.75	40.20	65.15	382.24	5.84	9.508	5.867	6.98	5.62
14 x 10 x 30.6	59.29	84.29	108.65	682.34	5.61	6.280	8.095	17.44	10.50
25.5	49.67	78.85	94.72	618.55	5.73	6.531	7.844	14.61	8.75
20.4	39.95	73.28	79.58	548.41	5.86	6.892	7.483	11.75	7.00
15.3	30.12	63.00	67.56	468.65	5.99	7.439	6.936	8.86	5.25
14 x 9 x 30.6	56.74	83.12	100.93	655.22	5.60	6.492	7.883	16.69	10.50
25.5	47.55	77.78	88.01	593.53	5.71	6.744	7.631	13.98	8.75
20.4	38.25	72.31	73.97	525.63	5.83	7.106	7.269	11.25	7.00
15.3	28.85	58.59	66.69	448.35	5.94	7.653	6.722	8.48	5.25
14 x 8 x 30.6	54.19	81.78	93.17	626.08	5.57	6.719	7.656	15.94	10.50
25.5	45.42	76.56	81.28	566.74	5.68	6.973	7.402	13.36	8.75
20.4	36.55	68.34	71.22	501.33	5.79	7.335	7.040	10.75	7.00
15.3	27.57	54.17	65.71	426.81	5.88	7.880	6.495	8.11	5.25
14 x 7 x 30.6	51.64	80.25	85.39	594.69	5.54	6.965	7.410	15.19	10.50
25.5	43.30	74.53	75.17	537.97	5.63	7.218	7.157	12.73	8.75
20.4	34.85	62.71	69.96	475.35	5.73	7.580	6.795	10.25	7.00
15.3	26.30	49.74	64.59	403.92	5.81	8.121	6.254	7.73	5.25
14 x 6 x 30.6	49.09	77.57	78.48	560.77	5.48	7.230	7.145	14.44	10.50
25.5	41.17	67.76	73.56	507.01	5.57	7.483	6.892	12.11	8.75
20.4	33.15	57.06	68.51	447.51	5.66	7.843	6.532	9.75	7.00
15.3	25.02	45.30	63.29	379.55	5.73	8.378	5.997	7.36	5.25
14 x 5 x 30.6	46.54	69.71	76.41	524.02	5.41	7.517	6.858	13.69	10.50
25.5	39.05	60.96	71.68	473.57	5.49	7.768	6.607	11.48	8.75
20.4	31.45	51.40	66.81	417.61	5.57	8.125	6.250	9.25	7.00
15.3	23.75	40.86	61.78	353.55	5.62	8.652	5.723	6.98	5.25
14 x 4 x 30.6	43.99	61.83	73.95	484.06	5.31	7.829	6.546	12.94	10.50
25.5	36.92	54.15	69.45	437.37	5.39	8.077	6.298	10.86	8.75
20.4	29.75	45.73	64.81	385.40	5.45	8.428	5.947	8.75	7.00
15.3	22.47	36.41	59.99	325.74	5.48	8.945	5.430	6.61	5.25
13 x 9 x 30.6	54.19	75.23	91.86	553.17	5.24	6.022	7.353	15.94	9.75
25.5	45.42	70.64	80.19	502.33	5.35	6.264	7.111	13.36	8.12
20.4	36.55	65.93	67.46	445.96	5.46	6.611	6.764	10.75	6.50
15.3	27.57	53.45	61.07	381.25	5.56	7.133	6.242	8.11	4.87
13 x 8 x 30.6	51.64	74.04	84.66	528.29	5.22	6.240	7.135	15.19	9.75
25.5	43.30	69.56	73.94	479.36	5.32	6.483	6.892	12.73	8.12
20.4	34.85	62.22	64.95	425.02	5.42	6.831	6.544	10.25	6.50
15.3	26.30	49.33	60.19	362.59	5.51	7.350	6.025	7.73	4.87
13 x 7 x 30.6	49.09	72.68	77.43	501.42	5.18	6.476	6.899	14.44	9.75
25.5	41.17	67.66	68.31	454.62	5.28	6.720	6.655	12.11	8.12
20.4	33.15	56.97	63.81	402.58	5.37	7.066	6.309	9.75	6.50
15.3	25.02	45.20	59.17	342.72	5.44	7.582	5.793	7.36	4.87
13 x 6 x 30.6	46.54	70.16	71.09	472.30	5.14	6.731	6.644	13.69	9.75
25.5	39.05	61.35	66.86	427.93	5.22	6.975	6.400	11.48	8.12
20.4	31.45	51.71	62.50	378.47	5.30	7.319	6.056	9.25	6.50
15.3	23.75	41.06	57.98	321.53	5.36	7.830	5.545	6.98	4.87
13 x 5 x 30.6	43.99	62.86	69.22	440.64	5.07	7.009	6.366	12.94	9.75
25.5	36.92	55.03	65.15	399.02	5.14	7.251	6.124	10.86	8.12
20.4	29.75	46.43	60.96	352.51	5.21	7.592	5.783	8.75	6.50
15.3	22.47	36.92	56.60	298.86	5.25	8.095	5.280	6.61	4.87



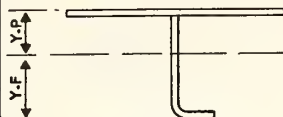
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
13 x 4 x 30.6	41.44	55.53	66.98	406.08	4.98	7.313	6.062	12.19	9.75
25.5	34.80	48.68	63.12	367.61	5.04	7.551	5.824	10.23	8.12
20.4	28.05	41.14	59.12	324.47	5.10	7.886	5.489	8.25	6.50
15.3	21.20	32.77	54.95	274.57	5.13	8.378	4.997	6.23	4.87
12 x 9 x 30.6	51.64	67.61	83.03	461.15	4.87	5.554	6.821	15.19	9.00
25.5	43.30	63.72	72.58	419.90	4.98	5.785	6.590	12.73	7.50
20.4	34.85	59.72	61.11	373.77	5.08	6.116	6.259	10.25	6.00
15.3	26.30	48.45	55.57	320.31	5.18	6.611	5.764	7.73	4.50
12 x 8 x 30.6	49.09	66.57	76.39	440.19	4.86	5.762	6.613	14.44	9.00
25.5	41.17	62.76	66.80	400.44	4.95	5.995	6.380	12.11	7.50
20.4	33.15	56.27	58.84	355.94	5.05	6.326	6.049	9.75	6.00
15.3	25.02	44.63	54.78	304.33	5.13	6.819	5.556	7.36	4.50
12 x 7 x 30.6	46.54	65.36	69.72	417.48	4.83	5.988	6.387	13.69	9.00
25.5	39.05	60.99	61.66	379.44	4.92	6.221	6.154	11.48	7.50
20.4	31.45	51.41	57.83	336.78	5.00	6.551	5.824	9.25	6.00
15.3	23.75	40.80	53.86	287.28	5.06	7.041	5.334	6.98	4.50
12 x 6 x 30.6	43.99	63.01	63.95	392.78	4.78	6.233	6.142	12.94	9.00
25.5	36.92	55.17	60.36	356.70	4.86	6.466	5.909	10.86	7.50
20.4	29.75	46.53	56.65	316.15	4.94	6.794	5.581	8.75	6.00
15.3	22.47	36.96	52.79	269.05	4.98	7.279	5.096	6.61	4.50
12 x 5 x 30.6	41.44	56.27	62.28	365.83	4.72	6.501	5.874	12.19	9.00
25.5	34.80	49.32	58.83	331.99	4.79	6.732	5.643	10.23	7.50
20.4	28.05	41.64	55.26	293.87	4.85	7.057	5.318	8.25	6.00
15.3	21.20	33.12	51.53	249.51	4.89	7.533	4.842	6.23	4.50
12 x 4 x 30.6	38.89	49.49	60.26	336.30	4.63	6.795	5.580	11.44	9.00
25.5	32.67	43.44	56.99	305.05	4.70	7.022	5.353	9.61	7.50
20.4	26.35	36.74	53.58	269.72	4.75	7.341	5.034	7.75	6.00
15.3	19.92	29.27	50.02	228.52	4.76	7.806	4.569	5.86	4.50
11 x 8 x 25.5	39.05	56.18	59.87	329.69	4.58	5.507	5.868	11.48	6.87
22.95	35.29	54.57	55.33	312.52	4.63	5.648	5.727	10.38	6.19
20.4	31.45	50.48	52.90	293.84	4.67	5.821	5.554	9.25	5.50
17.85	27.64	45.45	51.23	273.96	4.71	6.027	5.348	8.13	4.82
15.3	23.75	40.06	49.49	251.83	4.74	6.286	5.089	6.98	4.12
11 x 7 x 25.5	36.92	54.54	55.21	312.10	4.55	5.722	5.653	10.86	6.87
22.95	33.38	50.42	53.64	295.64	4.59	5.863	5.512	9.82	6.19
20.4	29.75	46.01	52.01	277.71	4.63	6.035	5.340	8.75	5.50
17.85	26.15	41.44	50.37	258.63	4.66	6.241	5.134	7.69	4.82
15.3	22.47	36.54	48.67	237.39	4.68	6.497	4.878	6.61	4.12
11 x 6 x 25.5	34.80	49.19	54.07	293.00	4.50	5.956	5.419	10.23	6.87
22.95	31.46	45.49	52.54	277.35	4.54	6.097	5.278	9.25	6.19
20.4	28.05	41.53	50.96	260.30	4.57	6.267	5.108	8.25	5.50
17.85	24.66	37.42	49.37	242.14	4.59	6.471	4.904	7.25	4.82
15.3	21.20	33.01	47.71	221.92	4.61	6.724	4.651	6.23	4.12
11 x 5 x 25.5	32.67	43.82	52.71	272.17	4.44	6.211	5.164	9.61	6.87
22.95	29.55	40.54	51.24	257.47	4.47	6.350	5.025	8.69	6.19
20.4	26.35	37.04	49.72	241.43	4.49	6.519	4.856	7.75	5.50
17.85	23.17	33.39	48.18	224.33	4.51	6.719	4.656	6.82	4.82
15.3	19.92	29.47	46.57	205.30	4.51	6.967	4.408	5.86	4.12
11 x 4 x 25.5	30.55	38.42	51.06	249.38	4.35	6.491	4.884	8.98	6.87
22.95	27.64	35.58	49.66	235.77	4.37	6.627	4.748	8.13	6.19
20.4	24.65	32.52	48.20	220.91	4.39	6.792	4.583	7.25	5.50
17.85	21.69	29.35	46.74	205.05	4.40	6.987	4.388	6.38	4.82
15.3	18.65	25.92	45.20	187.39	4.39	7.229	4.146	5.48	4.12



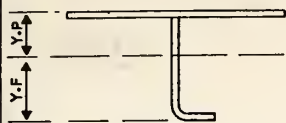
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

15.3 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 8 x 25.5	36.92	49.82	53.14	266.78	4.21	5.020	5.355	10.86	6.25
22.95	33.38	48.50	49.15	253.27	4.25	5.153	5.222	9.82	5.63
20.4	29.75	44.87	47.13	238.48	4.29	5.315	5.060	8.75	5.00
17.85	26.15	40.42	45.75	222.64	4.32	5.508	4.867	7.69	4.38
15.3	22.47	35.63	44.31	204.90	4.35	5.751	4.624	6.61	3.75
10 x 7 x 25.5	34.80	48.30	48.98	252.31	4.18	5.224	5.151	10.23	6.25
22.95	31.46	44.68	47.69	239.33	4.21	5.357	5.018	9.25	5.63
20.4	28.05	40.80	46.35	225.12	4.25	5.518	4.857	8.25	5.00
17.85	24.66	36.76	45.00	209.91	4.28	5.710	4.665	7.25	4.38
15.3	21.20	32.41	43.59	192.87	4.30	5.950	4.425	6.23	3.75
10 x 6 x 25.5	32.67	43.43	47.99	236.53	4.14	5.446	4.929	9.61	6.25
22.95	29.55	40.19	46.73	224.18	4.17	5.578	4.797	8.69	5.63
20.4	26.35	36.71	45.43	210.66	4.20	5.738	4.637	7.75	5.00
17.85	23.17	33.09	44.12	196.17	4.22	5.928	4.447	6.82	4.38
15.3	19.92	29.19	42.74	179.95	4.23	6.165	4.210	5.86	3.75
10 x 5 x 25.5	30.55	38.54	46.79	219.26	4.08	5.689	4.686	8.98	6.25
22.95	27.64	35.68	45.58	207.66	4.10	5.819	4.556	8.13	5.63
20.4	24.65	32.61	44.33	194.93	4.12	5.977	4.398	7.25	5.00
17.85	21.69	29.41	43.06	181.30	4.14	6.164	4.211	6.38	4.38
15.3	18.65	25.96	41.72	166.03	4.14	6.396	3.979	5.48	3.75
10 x 4 x 25.5	28.42	33.63	45.32	200.28	3.99	5.956	4.419	8.36	6.25
22.95	25.72	31.16	44.17	189.55	4.01	6.084	4.291	7.57	5.63
20.4	22.95	28.50	42.98	177.77	4.03	6.239	4.136	6.75	5.00
17.85	20.20	25.72	41.76	165.14	4.03	6.421	3.954	5.94	4.38
15.3	17.37	22.72	40.48	151.00	4.02	6.645	3.730	5.11	3.75



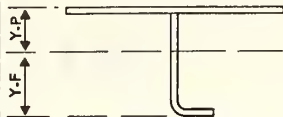
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

17.85 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	279.88	522.26	4,999.83	10.46	9.574	17.864	39.94	20.25
25.5	113.42	256.62	450.24	4,484.90	10.71	9.961	17.477	33.36	16.87
20.4	90.95	233.12	374.45	3,942.11	11.01	10.528	16.910	26.75	13.50
17.85	79.76	221.37	335.19	3,658.04	11.19	10.913	16.525	23.46	11.83
27 x 24 x 30.6	128.14	276.02	477.56	4,799.48	10.51	10.050	17.388	37.69	20.25
25.5	107.05	253.16	411.75	4,301.49	10.75	10.447	16.991	31.48	16.87
20.4	85.85	230.06	342.49	3,775.96	11.04	11.025	16.413	25.25	13.50
17.85	75.30	218.51	306.61	3,500.65	11.20	11.417	16.021	22.15	11.83
27 x 21 x 30.6	120.49	271.49	432.70	4,577.26	10.54	10.578	16.860	35.44	20.25
25.5	100.67	249.10	373.14	4,098.65	10.77	10.984	16.454	29.61	16.87
20.4	80.75	226.47	310.46	3,592.93	11.04	11.573	15.865	23.75	13.50
17.85	70.83	215.14	277.99	3,327.72	11.19	11.971	15.467	20.83	11.83
27 x 18 x 30.6	112.84	266.10	387.66	4,329.38	10.54	11.168	16.270	33.19	20.25
25.5	94.30	244.26	334.41	3,873.09	10.75	11.582	15.856	27.73	16.87
20.4	75.65	222.19	278.36	3,390.28	11.00	12.179	15.259	22.25	13.50
17.85	66.36	211.14	249.32	3,136.80	11.14	12.582	14.856	19.52	11.83
27 x 15 x 30.6	105.19	259.55	342.45	4,051.10	10.51	11.830	15.608	30.94	20.25
25.5	87.92	238.40	295.57	3,620.79	10.70	12.250	15.188	25.86	16.87
20.4	70.55	217.01	246.19	3,164.71	10.93	12.855	14.583	20.75	13.50
17.85	61.89	206.30	220.59	2,924.94	11.05	13.260	14.178	18.20	11.83
27 x 12 x 30.6	97.54	251.45	297.06	3,736.48	10.42	12.578	14.860	28.69	20.25
25.5	81.55	231.15	256.61	3,336.68	10.59	13.003	14.435	23.98	16.87
20.4	65.45	210.60	213.95	2,912.07	10.79	13.611	13.827	19.25	13.50
17.85	57.43	191.81	200.31	2,688.49	10.90	14.016	13.422	16.89	11.83
27 x 9 x 30.6	89.89	241.16	251.50	3,377.89	10.24	13.431	14.007	26.44	20.25
25.5	75.17	217.54	221.95	3,014.34	10.40	13.857	13.581	22.11	16.87
20.4	60.35	181.64	202.49	2,627.19	10.57	14.463	12.975	17.75	13.50
17.85	52.96	162.98	192.73	2,422.92	10.66	14.866	12.572	15.58	11.83
27 x 6 x 30.6	82.24	205.76	227.66	2,965.43	9.95	14.412	13.026	24.19	20.25
25.5	68.80	178.34	209.89	2,645.50	10.09	14.834	12.604	20.23	16.87
20.4	55.25	149.26	191.86	2,303.47	10.23	15.432	12.006	16.25	13.50
17.85	48.49	134.10	182.81	2,122.48	10.30	15.828	11.610	14.26	11.83
24 x 24 x 30.6	120.49	233.47	415.85	3,654.05	9.42	8.787	15.651	35.44	18.00
25.5	100.67	215.32	359.09	3,289.46	9.64	9.161	15.277	29.61	15.00
20.4	80.75	196.95	299.03	2,901.78	9.92	9.704	14.734	23.75	12.00
17.85	70.83	187.75	267.80	2,697.19	10.07	10.072	14.366	20.83	10.51
24 x 22 x 30.6	115.39	231.12	389.22	3,543.82	9.45	9.105	15.333	33.94	18.00
25.5	96.42	213.20	336.11	3,187.97	9.67	9.485	14.953	28.36	15.00
20.4	77.35	195.06	279.92	2,809.24	9.93	10.036	14.402	22.75	12.00
17.85	67.85	185.97	250.71	2,609.24	10.07	10.408	14.030	19.96	10.51
24 x 20 x 30.6	110.29	228.48	362.52	3,424.95	9.47	9.448	14.990	32.44	18.00
25.5	92.17	210.81	313.08	3,078.77	9.68	9.834	14.604	27.11	15.00
20.4	73.95	192.93	260.79	2,709.98	9.93	10.392	14.046	21.75	12.00
17.85	64.87	183.97	233.59	2,515.08	10.06	10.767	13.671	19.08	10.51
24 x 18 x 30.6	105.19	225.48	335.72	3,296.36	9.48	9.819	14.619	30.94	18.00
25.5	87.92	208.11	290.00	2,960.93	9.68	10.210	14.228	25.86	15.00
20.4	70.55	190.52	241.62	2,603.22	9.91	10.774	13.664	20.75	12.00
17.85	61.89	181.71	216.46	2,414.04	10.04	11.153	13.285	18.20	10.51
24 x 16 x 30.6	100.09	222.05	308.85	3,156.81	9.47	10.221	14.217	29.44	18.00
25.5	83.67	205.02	266.85	2,833.39	9.66	10.618	13.820	24.61	15.00
20.4	67.15	187.76	222.41	2,488.10	9.88	11.187	13.251	19.75	12.00
17.85	58.92	179.12	199.29	2,305.33	9.99	11.568	12.870	17.33	10.51



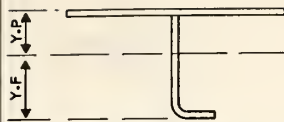
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 14 x 30.6	94.99	218.08	281.89	3,004.85	9.44	10.660	13.778	27.94	18.00
25.5	79.42	201.45	243.66	2,694.90	9.62	11.060	13.378	23.36	15.00
20.4	63.75	184.59	203.18	2,363.58	9.82	11.633	12.805	18.75	12.00
17.85	55.94	176.13	182.11	2,188.05	9.93	12.015	12.423	16.45	10.51
24 x 12 x 30.6	89.89	213.45	254.85	2,838.73	9.39	11.139	13.299	26.44	18.00
25.5	75.17	197.27	220.41	2,543.99	9.56	11.542	12.896	22.11	15.00
20.4	60.35	180.88	183.91	2,228.47	9.74	12.117	12.321	17.75	12.00
17.85	52.96	164.90	172.65	2,061.14	9.83	12.500	11.938	15.58	10.51
24 x 10 x 30.6	84.79	207.96	227.73	2,656.38	9.30	11.665	12.773	24.94	18.00
25.5	70.92	192.34	197.10	2,378.91	9.45	12.070	12.368	20.86	15.00
20.4	56.95	164.60	176.49	2,081.36	9.62	12.645	11.793	16.75	12.00
17.85	49.98	147.66	168.53	1,923.35	9.70	13.026	11.412	14.70	10.51
24 x 8 x 30.6	79.69	200.51	201.37	2,455.29	9.17	12.245	12.193	23.44	18.00
25.5	66.67	173.73	186.41	2,197.56	9.31	12.649	11.789	19.61	15.00
20.4	53.55	145.26	171.22	1,920.56	9.45	13.221	11.217	15.75	12.00
17.85	47.00	130.40	163.59	1,773.24	9.52	13.599	10.839	13.82	10.51
24 x 6 x 30.6	74.59	173.22	193.28	2,232.43	8.98	12.888	11.550	21.94	18.00
25.5	62.42	150.31	179.15	1,997.42	9.10	13.289	11.149	18.36	15.00
20.4	50.15	125.89	164.78	1,744.08	9.22	13.854	10.584	14.75	12.00
17.85	44.02	113.11	157.56	1,609.06	9.28	14.225	10.213	12.95	10.51
21 x 20 x 30.6	102.64	189.75	309.35	2,521.27	8.38	8.150	13.288	30.19	15.75
25.5	85.80	176.17	267.61	2,277.42	8.57	8.510	12.928	25.23	13.12
20.4	68.85	162.39	223.17	2,015.08	8.80	9.029	12.409	20.25	10.50
17.85	60.40	155.48	199.96	1,875.17	8.93	9.377	12.061	17.77	9.20
21 x 18 x 30.6	97.54	187.39	285.85	2,426.57	8.39	8.489	12.949	28.69	15.75
25.5	81.55	174.03	247.30	2,189.85	8.58	8.855	12.583	23.98	13.12
20.4	65.45	160.47	206.27	1,934.90	8.80	9.380	12.058	19.25	10.50
17.85	57.43	153.66	184.84	1,798.83	8.91	9.732	11.706	16.89	9.20
21 x 16 x 30.6	92.44	184.68	262.26	2,323.25	8.40	8.858	12.580	27.19	15.75
25.5	77.30	171.57	226.94	2,094.59	8.57	9.230	12.208	22.73	13.12
20.4	62.05	158.26	189.33	1,848.04	8.77	9.761	11.677	18.25	10.50
17.85	54.45	151.58	169.69	1,716.36	8.88	10.115	11.323	16.01	9.20
21 x 14 x 30.6	87.34	181.53	238.59	2,210.07	8.38	9.263	12.175	25.69	15.75
25.5	73.05	168.71	206.51	1,990.59	8.55	9.639	11.799	21.48	13.12
20.4	58.65	155.69	172.36	1,753.63	8.73	10.174	11.264	17.25	10.50
17.85	51.47	149.15	154.51	1,626.96	8.82	10.530	10.908	15.14	9.20
21 x 12 x 30.6	82.24	177.80	214.82	2,085.57	8.35	9.708	11.730	24.19	15.75
25.5	68.80	165.33	186.03	1,876.59	8.50	10.088	11.350	20.23	13.12
20.4	55.25	152.66	155.35	1,650.65	8.66	10.625	10.813	16.25	10.50
17.85	48.49	139.31	146.29	1,529.75	8.74	10.981	10.457	14.26	9.20
21 x 10 x 30.6	77.14	173.35	190.96	1,947.93	8.28	10.201	11.237	22.69	15.75
25.5	64.55	161.29	165.49	1,751.07	8.41	10.581	10.857	18.98	13.12
20.4	51.85	138.31	149.03	1,537.86	8.56	11.119	10.319	15.25	10.50
17.85	45.51	124.08	142.87	1,423.64	8.62	11.473	9.965	13.39	9.20
21 x 8 x 30.6	72.04	167.01	167.91	1,794.98	8.16	10.748	10.690	21.19	15.75
25.5	60.30	144.88	156.37	1,612.20	8.28	11.128	10.310	17.73	13.12
20.4	48.45	121.23	144.63	1,413.79	8.41	11.663	9.775	14.25	10.50
17.85	42.53	108.83	138.71	1,307.35	8.46	12.013	9.425	12.51	9.20
21 x 6 x 30.6	66.94	142.97	161.13	1,624.01	7.99	11.359	10.070	19.69	15.75
25.5	56.05	124.21	150.25	1,457.73	8.10	11.736	9.702	16.48	13.12
20.4	45.05	104.11	139.15	1,276.67	8.20	12.263	9.175	13.25	10.50
17.85	39.56	93.54	133.55	1,179.34	8.24	12.607	8.831	11.63	9.20



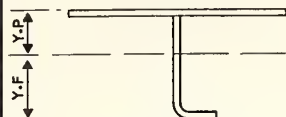
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 18 x 30.6	89.89	151.89	237.99	1,709.49	7.29	7.183	11.255	26.44	13.50
25.5	75.17	142.06	206.30	1,551.17	7.46	7.519	10.919	22.11	11.25
20.4	60.35	132.06	172.30	1,378.46	7.66	8.000	10.438	17.75	9.00
15.3	45.42	121.86	135.56	1,183.21	7.87	8.728	9.710	13.36	6.75
18 x 16 x 30.6	84.79	149.83	217.74	1,636.49	7.30	7.516	10.922	24.94	13.50
25.5	70.92	140.18	188.76	1,483.17	7.47	7.858	10.580	20.86	11.25
20.4	56.95	130.35	157.67	1,315.70	7.65	8.345	10.093	16.75	9.00
15.3	42.87	120.32	124.08	1,126.26	7.83	9.077	9.361	12.61	6.75
18 x 14 x 30.6	79.69	147.42	197.39	1,556.00	7.30	7.883	10.555	23.44	13.50
25.5	66.67	137.97	171.15	1,408.46	7.45	8.229	10.209	19.61	11.25
20.4	53.55	128.34	143.00	1,247.11	7.62	8.721	9.717	15.75	9.00
15.3	40.32	112.57	118.51	1,064.46	7.77	9.456	8.982	11.86	6.75
18 x 12 x 30.6	74.59	144.53	176.95	1,466.80	7.28	8.290	10.148	21.94	13.50
25.5	62.42	135.33	153.48	1,326.01	7.42	8.640	9.798	18.36	11.25
20.4	50.15	125.95	128.29	1,171.84	7.56	9.134	9.304	14.75	9.00
15.3	37.77	101.05	116.35	997.16	7.69	9.868	8.570	11.11	6.75
18 x 10 x 30.6	69.49	141.04	156.40	1,367.39	7.23	8.743	9.695	20.44	13.50
25.5	58.17	132.14	135.74	1,234.55	7.35	9.095	9.343	17.11	11.25
20.4	46.75	113.54	123.06	1,088.84	7.47	9.590	8.848	13.75	9.00
15.3	35.22	89.51	113.75	923.59	7.57	10.318	8.120	10.36	6.75
18 x 8 x 30.6	64.39	135.76	136.71	1,255.91	7.13	9.251	9.187	18.94	13.50
25.5	53.92	117.93	128.19	1,132.52	7.24	9.603	8.835	15.86	11.25
20.4	43.35	98.76	119.48	996.88	7.34	10.094	8.344	12.75	9.00
15.3	32.67	77.95	110.54	842.85	7.41	10.813	7.625	9.61	6.75
18 x 6 x 30.6	59.29	115.01	131.20	1,130.02	6.98	9.825	8.613	17.44	13.50
25.5	49.67	100.06	123.17	1,017.96	7.07	10.173	8.265	14.61	11.25
20.4	39.95	83.93	114.94	894.41	7.15	10.657	7.781	11.75	9.00
15.3	30.12	66.37	106.48	753.82	7.18	11.358	7.080	8.86	6.75
18 x 4 x 30.6	54.19	94.16	123.97	986.73	6.74	10.479	7.959	15.94	13.50
25.5	45.42	82.12	116.59	888.43	6.82	10.818	7.620	13.36	11.25
20.4	36.55	69.06	109.01	779.53	6.87	11.287	7.151	10.75	9.00
15.3	27.57	54.77	101.18	655.15	6.87	11.963	6.475	8.11	6.75
16 x 12 x 30.6	69.49	123.69	152.89	1,123.92	6.55	7.351	9.087	20.44	12.00
25.5	58.17	116.42	132.78	1,019.68	6.68	7.679	8.759	17.11	10.00
20.4	46.75	108.99	111.08	904.30	6.81	8.141	8.297	13.75	8.00
15.3	35.22	87.50	101.35	771.93	6.92	8.822	7.616	10.36	6.00
16 x 10 x 30.6	64.39	120.79	134.58	1,046.41	6.51	7.775	8.663	18.94	12.00
25.5	53.92	113.76	116.94	947.88	6.62	8.105	8.333	15.86	10.00
20.4	43.35	97.89	106.55	838.65	6.73	8.567	7.871	12.75	8.00
15.3	32.67	77.17	99.14	713.28	6.81	9.243	7.195	9.61	6.00
16 x 8 x 30.6	59.29	116.18	117.16	958.88	6.43	8.254	8.184	17.44	12.00
25.5	49.67	101.03	110.42	867.26	6.53	8.584	7.854	14.61	10.00
20.4	39.95	84.66	103.51	765.51	6.61	9.042	7.396	11.75	8.00
15.3	30.12	66.81	96.38	648.61	6.66	9.708	6.730	8.86	6.00
16 x 6 x 30.6	54.19	97.66	112.48	859.26	6.29	8.799	7.639	15.94	12.00
25.5	45.42	85.06	106.12	776.11	6.37	9.125	7.313	13.36	10.00
20.4	36.55	71.38	99.59	683.49	6.44	9.575	6.863	10.75	8.00
15.3	27.57	56.44	92.83	576.94	6.45	10.223	6.215	8.11	6.00
16 x 4 x 30.6	49.09	79.04	106.20	744.85	6.07	9.424	7.014	14.44	12.00
25.5	41.17	69.01	100.38	672.21	6.13	9.741	6.697	12.11	10.00
20.4	33.15	58.07	94.37	590.91	6.17	10.177	6.261	9.75	8.00
15.3	25.02	46.04	88.12	497.08	6.16	10.797	5.641	7.36	6.00



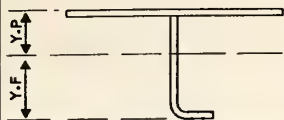
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 12 x 30.6	66.94	113.67	141.21	972.22	6.18	6.885	8.553	19.69	11.25
25.5	56.05	107.29	122.73	883.79	6.30	7.201	8.237	16.48	9.37
20.4	45.05	100.76	102.73	785.29	6.43	7.644	7.794	13.25	7.50
15.3	33.95	80.93	94.03	671.47	6.53	8.297	7.141	9.98	5.62
15 x 11 x 30.6	64.39	112.44	132.64	939.44	6.17	7.083	8.355	18.94	11.25
25.5	53.92	106.15	115.30	853.25	6.28	7.400	8.038	15.86	9.37
20.4	43.35	96.53	99.71	757.20	6.40	7.844	7.594	12.75	7.50
15.3	32.67	76.07	93.07	646.20	6.49	8.495	6.943	9.61	5.62
15 x 10 x 30.6	61.84	111.06	124.04	904.60	6.15	7.293	8.145	18.19	11.25
25.5	51.80	104.88	107.86	820.90	6.25	7.611	7.827	15.23	9.37
20.4	41.65	90.32	98.55	727.55	6.36	8.055	7.383	12.25	7.50
15.3	31.40	71.20	92.00	619.67	6.43	8.703	6.735	9.23	5.62
15 x 9 x 30.6	59.29	109.51	115.42	867.51	6.12	7.516	7.922	17.44	11.25
25.5	49.67	100.39	103.46	786.57	6.22	7.835	7.603	14.61	9.37
20.4	39.95	84.10	97.24	696.21	6.31	8.278	7.160	11.75	7.50
15.3	30.12	66.33	90.81	591.77	6.36	8.921	6.517	8.86	5.62
15 x 8 x 30.6	56.74	106.76	107.77	827.95	6.07	7.755	7.683	16.69	11.25
25.5	47.55	92.91	101.84	750.06	6.16	8.073	7.365	13.98	9.37
20.4	38.25	77.87	95.76	663.03	6.24	8.514	6.924	11.25	7.50
15.3	28.85	61.46	89.46	562.41	6.28	9.151	6.287	8.48	5.62
15 x 7 x 30.6	54.19	98.08	105.77	785.65	6.02	8.010	7.428	15.94	11.25
25.5	45.42	85.40	100.01	711.16	6.10	8.327	7.111	13.36	9.37
20.4	36.55	71.63	94.08	627.84	6.17	8.764	6.674	10.75	7.50
15.3	27.57	56.58	87.93	531.46	6.19	9.394	6.044	8.11	5.62
15 x 6 x 30.6	51.64	89.37	103.48	740.33	5.95	8.284	7.154	15.19	11.25
25.5	43.30	77.88	97.90	669.64	6.02	8.598	6.840	12.73	9.37
20.4	34.85	65.38	92.15	590.45	6.07	9.030	6.408	10.25	7.50
15.3	26.30	51.69	86.17	498.79	6.08	9.650	5.788	7.73	5.62
15 x 5 x 30.6	49.09	80.63	100.82	691.64	5.85	8.578	6.860	14.44	11.25
25.5	41.17	70.34	95.45	625.21	5.92	8.888	6.550	12.11	9.37
20.4	33.15	59.12	89.91	550.65	5.96	9.314	6.124	9.75	7.50
15.3	25.02	46.80	84.14	464.25	5.95	9.920	5.518	7.36	5.62
15 x 4 x 30.6	46.54	71.87	97.68	639.20	5.73	8.894	6.544	13.69	11.25
25.5	39.05	62.79	92.57	577.57	5.79	9.199	6.239	11.48	9.37
20.4	31.45	52.85	87.28	508.19	5.82	9.616	5.822	9.25	7.50
15.3	23.75	41.90	81.76	427.67	5.79	10.207	5.231	6.98	5.62
14 x 10 x 30.6	59.29	101.59	113.74	774.75	5.78	6.812	7.626	17.44	10.50
25.5	49.67	96.22	98.98	704.42	5.88	7.117	7.321	14.61	8.75
20.4	39.95	82.93	90.70	625.45	5.98	7.542	6.896	11.75	7.00
15.3	30.12	65.38	84.98	533.50	6.04	8.160	6.278	8.86	5.25
14 x 9 x 30.6	56.74	100.20	105.68	742.60	5.75	7.027	7.411	16.69	10.50
25.5	47.55	91.99	94.93	674.55	5.85	7.333	7.105	13.98	8.75
20.4	38.25	77.10	89.51	598.07	5.93	7.757	6.681	11.25	7.00
15.3	28.85	60.81	83.89	509.03	5.98	8.370	6.068	8.48	5.25
14 x 8 x 30.6	54.19	97.60	98.62	708.24	5.71	7.257	7.181	15.94	10.50
25.5	45.42	84.99	93.47	642.72	5.80	7.562	6.876	13.36	8.75
20.4	36.55	71.27	88.17	569.03	5.87	7.984	6.454	10.75	7.00
15.3	27.57	56.24	82.66	483.23	5.90	8.592	5.846	8.11	5.25
14 x 7 x 30.6	51.64	89.48	96.82	671.41	5.66	7.503	6.935	15.19	10.50
25.5	43.30	77.97	91.80	608.74	5.74	7.807	6.631	12.73	8.75
20.4	34.85	65.43	86.63	538.18	5.80	8.226	6.212	10.25	7.00
15.3	26.30	51.67	81.25	456.01	5.81	8.825	5.613	7.73	5.25



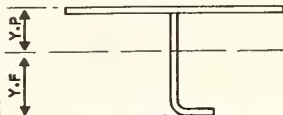
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ⁴
14 x 6 x 30.6	49.09	81.34	94.73	631.85	5.59	7.768	6.670	14.44	10.50
25.5	41.17	70.93	89.88	572.39	5.66	8.069	6.369	12.11	8.75
20.4	33.15	59.57	84.86	505.34	5.71	8.483	5.955	9.75	7.00
15.3	25.02	47.09	79.62	427.22	5.71	9.072	5.366	7.36	5.25
13 x 9 x 30.6	54.19	91.14	96.20	628.91	5.38	6.538	6.900	15.94	9.75
25.5	45.42	83.81	86.62	572.40	5.47	6.830	6.608	13.36	8.12
20.4	36.55	70.28	81.95	508.41	5.55	7.234	6.204	10.75	6.50
15.3	27.57	55.44	77.08	433.32	5.59	7.816	5.622	8.11	4.87
13 x 8 x 30.6	51.64	88.69	89.73	599.37	5.35	6.758	6.680	15.19	9.75
25.5	43.30	77.29	85.31	544.93	5.43	7.050	6.388	12.73	8.12
20.4	34.85	64.85	80.73	483.25	5.50	7.452	5.986	10.25	6.50
15.3	26.30	51.18	75.96	410.89	5.52	8.029	5.409	7.73	4.87
13 x 7 x 30.6	49.09	81.14	88.11	567.64	5.30	6.995	6.443	14.44	9.75
25.5	41.17	70.76	83.80	515.55	5.37	7.286	6.152	12.11	8.12
20.4	33.15	59.40	79.34	456.47	5.43	7.684	5.754	9.75	6.50
15.3	25.02	46.91	74.67	387.17	5.43	8.253	5.185	7.36	4.87
13 x 6 x 30.6	46.54	73.57	86.22	533.47	5.24	7.251	6.187	13.69	9.75
25.5	39.05	64.21	82.05	484.03	5.30	7.539	5.899	11.48	8.12
20.4	31.45	53.94	77.72	427.90	5.34	7.932	5.506	9.25	6.50
15.3	23.75	42.64	73.17	362.05	5.33	8.490	4.948	6.98	4.87
12 x 9 x 30.6	51.64	82.34	86.96	526.06	5.01	6.049	6.389	15.19	9.00
25.5	43.30	75.83	78.51	479.80	5.09	6.327	6.111	12.73	7.50
20.4	34.85	63.64	74.54	426.99	5.17	6.710	5.728	10.25	6.00
15.3	26.30	50.20	70.38	364.47	5.20	7.260	5.178	7.73	4.50
12 x 8 x 30.6	49.09	80.03	81.09	500.98	4.98	6.260	6.178	14.44	9.00
25.5	41.17	69.81	77.34	456.38	5.05	6.537	5.901	12.11	7.50
20.4	33.15	58.60	73.45	405.44	5.11	6.918	5.520	9.75	6.00
15.3	25.02	46.26	69.37	345.17	5.13	7.462	4.976	7.36	4.50
12 x 7 x 30.6	46.54	73.06	79.65	473.96	4.94	6.487	5.951	13.69	9.00
25.5	39.05	63.77	75.99	431.26	5.00	6.763	5.675	11.48	7.50
20.4	31.45	53.56	72.20	382.46	5.05	7.141	5.297	9.25	6.00
15.3	23.75	42.31	68.19	324.74	5.05	7.676	4.762	6.98	4.50
12 x 6 x 30.6	43.99	66.07	77.96	444.79	4.88	6.732	5.706	12.94	9.00
25.5	36.92	57.70	74.42	404.26	4.93	7.006	5.432	10.86	7.50
20.4	29.75	48.51	70.73	357.89	4.97	7.378	5.060	8.75	6.00
15.3	22.47	38.35	66.83	303.06	4.95	7.903	4.535	6.61	4.50
11 x 8 x 25.5	39.05	62.55	69.58	376.76	4.68	6.024	5.414	11.48	6.87
22.95	35.29	57.71	67.99	357.03	4.70	6.187	5.251	10.38	6.19
20.4	31.45	52.54	66.33	335.34	4.73	6.382	5.056	9.25	5.50
17.85	27.64	47.20	64.65	312.04	4.74	6.611	4.827	8.13	4.82
15.3	23.75	41.48	62.88	285.89	4.74	6.891	4.547	6.98	4.12
11 x 7 x 25.5	36.92	57.00	68.39	355.58	4.63	6.238	5.200	10.86	6.87
22.95	33.38	52.60	66.83	336.67	4.65	6.400	5.038	9.82	6.19
20.4	29.75	47.91	65.20	315.88	4.67	6.594	4.844	8.75	5.50
17.85	26.15	43.05	63.56	293.56	4.67	6.819	4.619	7.69	4.82
15.3	22.47	37.85	61.82	268.52	4.66	7.095	4.343	6.61	4.12
11 x 6 x 25.5	34.80	51.43	66.98	332.76	4.56	6.470	4.968	10.23	6.87
22.95	31.46	47.48	65.47	314.79	4.58	6.630	4.808	9.25	6.19
20.4	28.05	43.26	63.89	295.04	4.59	6.820	4.618	8.25	5.50
17.85	24.66	38.89	62.28	273.83	4.59	7.042	4.396	7.25	4.82
15.3	21.20	34.20	60.59	250.06	4.57	7.311	4.127	6.23	4.12
10 x 8 x 25.5	36.92	55.50	62.03	305.74	4.29	5.509	4.929	10.86	6.25
22.95	33.38	51.23	60.72	290.05	4.32	5.661	4.777	9.82	5.63



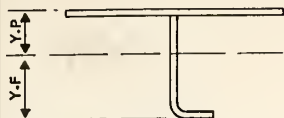
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
10 x 8 x 20.4	29.75	46.67	59.35	272.71	4.34	5.843	4.595	8.75	5.00
17.85	26.15	41.93	57.96	253.97	4.35	6.056	4.382	7.69	4.38
15.3	22.47	36.86	56.49	232.84	4.34	6.316	4.122	6.61	3.75
10 x 7 x 25.5	34.80	50.45	60.98	288.19	4.25	5.712	4.726	10.23	6.25
22.95	31.46	46.58	59.70	273.13	4.27	5.863	4.575	9.25	5.63
20.4	28.05	42.44	58.36	256.49	4.28	6.043	4.395	8.25	5.00
17.85	24.66	38.15	57.00	238.54	4.28	6.253	4.185	7.25	4.38
15.3	21.20	33.54	55.55	218.30	4.27	6.508	3.930	6.23	3.75
10 x 6 x 25.5	32.67	45.38	59.74	269.20	4.19	5.932	4.506	9.61	6.25
22.95	29.55	41.92	58.50	254.89	4.20	6.081	4.357	8.69	5.63
20.4	26.35	38.21	57.19	239.08	4.21	6.258	4.180	7.75	5.00
17.85	23.17	34.35	55.86	222.03	4.20	6.463	3.975	6.82	4.38
15.3	19.92	30.22	54.44	202.83	4.18	6.712	3.726	5.86	3.75



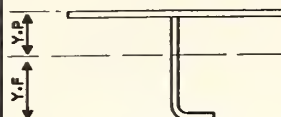
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 30.6	151.09	375.02	662.38	7,303.29	11.86	11.026	19.474	44.44	22.50
25.5	126.17	346.18	570.37	6,570.57	12.14	11.520	18.980	37.11	18.75
20.4	101.15	317.06	473.62	5,792.51	12.47	12.230	18.270	29.75	15.00
17.85	88.70	302.49	423.54	5,382.13	12.66	12.707	17.793	26.09	13.14
30 x 27 x 30.6	143.44	370.49	611.43	7,036.38	11.90	11.508	18.992	42.19	22.50
25.5	119.80	342.09	526.55	6,324.67	12.17	12.012	18.488	35.23	18.75
20.4	96.05	313.40	437.30	5,568.16	12.48	12.733	17.767	28.25	15.00
17.85	84.23	299.05	391.11	5,168.83	12.66	13.216	17.284	24.77	13.14
30 x 24 x 30.6	135.79	365.26	560.32	6,744.17	11.92	12.036	18.464	39.94	22.50
25.5	113.42	337.36	482.63	6,056.20	12.17	12.548	17.952	33.36	18.75
20.4	90.95	309.18	400.93	5,324.15	12.47	13.280	17.220	26.75	15.00
17.85	79.76	295.08	358.63	4,937.43	12.63	13.768	16.732	23.46	13.14
30 x 21 x 30.6	128.14	359.16	509.07	6,422.87	11.92	12.617	17.883	37.69	22.50
25.5	107.05	331.85	438.60	5,761.92	12.16	13.137	17.363	31.48	18.75
20.4	85.85	304.25	364.49	5,057.80	12.43	13.876	16.624	25.25	15.00
17.85	75.30	290.45	326.11	4,685.52	12.57	14.368	16.132	22.15	13.14
30 x 18 x 30.6	120.49	351.93	457.67	6,067.90	11.89	13.258	17.242	35.44	22.50
25.5	100.67	325.33	394.48	5,437.90	12.11	13.785	16.715	29.61	18.75
20.4	80.75	298.44	327.99	4,765.88	12.35	14.531	15.969	23.75	15.00
17.85	70.83	284.98	293.54	4,410.24	12.48	15.024	15.476	20.83	13.14
30 x 15 x 30.6	112.84	343.25	406.11	5,673.69	11.81	13.971	16.529	33.19	22.50
25.5	94.30	317.50	350.26	5,079.41	12.01	14.502	15.998	27.73	18.75
20.4	75.65	291.43	291.45	4,444.53	12.22	15.251	15.249	22.25	15.00
17.85	66.36	260.93	278.41	4,108.18	12.33	15.744	14.756	19.52	13.14
30 x 12 x 30.6	105.19	332.63	354.40	5,233.34	11.67	14.767	15.733	30.94	22.50
25.5	87.92	305.94	307.92	4,680.62	11.85	15.299	15.201	25.86	18.75
20.4	70.55	254.82	282.92	4,089.05	12.03	16.047	14.453	20.75	15.00
17.85	61.89	228.28	270.39	3,775.25	12.12	16.538	13.962	18.20	13.14
30 x 9 x 30.6	97.54	302.54	319.32	4,738.24	11.44	15.661	14.839	28.69	22.50
25.5	81.55	261.51	295.94	4,234.35	11.60	16.192	14.308	23.98	18.75
20.4	65.45	218.14	272.25	3,693.71	11.75	16.933	13.567	19.25	15.00
17.85	57.43	195.58	260.38	3,406.45	11.82	17.417	13.083	16.89	13.14
30 x 6 x 30.6	89.89	250.53	302.17	4,177.51	11.09	16.675	13.825	26.44	22.50
25.5	75.17	216.98	280.51	3,731.56	11.23	17.197	13.303	22.11	18.75
20.4	60.35	181.40	258.54	3,251.40	11.35	17.924	12.576	17.75	15.00
17.85	52.96	162.84	247.50	2,995.65	11.39	18.396	12.104	15.58	13.14
27 x 27 x 30.6	135.79	320.25	540.82	5,531.43	10.80	10.228	17.272	39.94	20.25
25.5	113.42	297.13	466.21	4,990.45	11.05	10.704	16.796	33.36	16.87
20.4	90.95	273.74	387.44	4,411.18	11.35	11.385	16.115	26.75	13.50
17.85	79.76	262.03	346.55	4,103.29	11.51	11.841	15.659	23.46	11.83
27 x 24 x 30.6	128.14	315.94	494.66	5,302.02	10.83	10.718	16.782	37.69	20.25
25.5	107.05	293.21	426.47	4,778.17	11.07	11.204	16.296	31.48	16.87
20.4	85.85	270.22	354.47	4,216.63	11.35	11.896	15.604	25.25	13.50
17.85	75.30	258.71	317.10	3,917.94	11.50	12.356	15.144	22.15	11.83
27 x 21 x 30.6	120.49	310.88	448.34	5,048.58	10.84	11.261	16.239	35.44	20.25
25.5	100.67	288.62	386.62	4,544.45	11.07	11.754	15.746	29.61	16.87
20.4	80.75	266.09	321.44	4,003.41	11.32	12.455	15.045	23.75	13.50
17.85	70.83	254.80	287.60	3,715.39	11.45	12.918	14.582	20.83	11.83
27 x 18 x 30.6	112.84	304.85	401.87	4,767.12	10.82	11.862	15.638	33.19	20.25
25.5	94.30	283.14	346.66	4,285.86	11.03	12.363	15.137	27.73	16.87
20.4	75.65	261.17	288.35	3,768.69	11.26	13.070	14.430	22.25	13.50
17.85	66.36	250.16	258.06	3,493.14	11.37	13.536	13.964	19.52	11.83



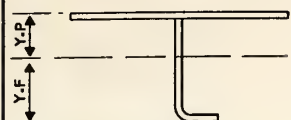
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 15 x 30.6	105.19	297.54	355.23	4,452.72	10.76	12.535	14.965	30.94	20.25
25.5	87.92	276.51	306.60	3,998.20	10.95	13.041	14.459	25.86	16.87
20.4	70.55	255.19	255.21	3,509.04	11.15	13.751	13.749	20.75	13.50
17.85	61.89	228.47	244.53	3,248.18	11.24	14.217	13.283	18.20	11.83
27 x 12 x 30.6	97.54	288.49	308.42	4,099.23	10.64	13.291	14.209	28.69	20.25
25.5	81.55	266.43	268.31	3,676.29	10.81	13.799	13.701	23.98	16.87
20.4	65.45	221.97	247.86	3,220.28	10.97	14.508	12.992	19.25	13.50
17.85	57.43	198.84	237.59	2,976.82	11.05	14.971	12.529	16.89	11.83
27 x 9 x 30.6	89.89	261.46	277.01	3,698.89	10.44	14.147	13.353	26.44	20.25
25.5	75.17	226.15	257.92	3,313.62	10.58	14.653	12.847	22.11	16.87
20.4	60.35	188.69	238.54	2,897.22	10.71	15.355	12.145	17.75	13.50
17.85	52.96	169.16	228.81	2,674.56	10.77	15.811	11.689	15.58	11.83
27 x 6 x 30.6	82.24	214.33	261.96	3,241.71	10.11	15.125	12.375	24.19	20.25
25.5	68.80	185.76	244.31	2,901.92	10.23	15.622	11.878	20.23	16.87
20.4	55.25	155.34	226.36	2,533.35	10.33	16.309	11.191	16.25	13.50
17.85	48.49	139.43	217.33	2,335.80	10.36	16.752	10.748	14.26	11.83
24 x 24 x 30.6	120.49	269.22	430.99	4,059.90	9.72	9.420	15.080	35.44	18.00
25.5	100.67	251.19	371.98	3,673.49	9.95	9.875	14.625	29.61	15.00
20.4	80.75	232.91	309.39	3,255.52	10.21	10.523	13.977	23.75	12.00
17.85	70.83	223.75	276.79	3,031.35	10.34	10.952	13.548	20.83	10.51
24 x 22 x 30.6	115.39	266.57	403.46	3,932.67	9.74	9.747	14.753	33.94	18.00
25.5	96.42	248.76	348.24	3,555.15	9.96	10.209	14.291	28.36	15.00
20.4	77.35	230.72	289.68	3,146.48	10.20	10.862	13.638	22.75	12.00
17.85	67.85	221.66	259.18	2,927.20	10.33	11.294	13.206	19.96	10.51
24 x 20 x 30.6	110.29	263.59	375.86	3,795.89	9.75	10.099	14.401	32.44	18.00
25.5	92.17	246.04	324.46	3,428.27	9.95	10.566	13.934	27.11	15.00
20.4	73.95	228.25	269.94	3,030.00	10.18	11.225	13.275	21.75	12.00
17.85	64.87	219.32	241.54	2,816.20	10.29	11.659	12.841	19.08	10.51
24 x 18 x 30.6	105.19	260.21	348.17	3,648.44	9.74	10.479	14.021	30.94	18.00
25.5	87.92	242.95	300.62	3,291.88	9.93	10.950	13.550	25.86	15.00
20.4	70.55	225.45	250.17	2,905.26	10.14	11.613	12.887	20.75	12.00
17.85	61.89	216.66	223.88	2,697.62	10.24	12.049	12.451	18.20	10.51
24 x 16 x 30.6	100.09	256.34	320.41	3,489.02	9.72	10.889	13.611	29.44	18.00
25.5	83.67	239.42	276.73	3,144.88	9.90	11.365	13.135	24.61	15.00
20.4	67.15	222.25	230.36	2,771.38	10.08	12.030	12.470	19.75	12.00
17.85	58.92	206.21	213.63	2,570.69	10.18	12.467	12.033	17.33	10.51
24 x 14 x 30.6	94.99	251.87	292.58	3,316.11	9.67	11.334	13.166	27.94	18.00
25.5	79.42	235.34	252.79	2,985.97	9.84	11.812	12.688	23.36	15.00
20.4	63.75	210.53	218.56	2,627.29	10.00	12.479	12.021	18.75	12.00
17.85	55.94	188.51	210.13	2,434.46	10.08	12.915	11.585	16.45	10.51
24 x 12 x 30.6	89.89	246.65	264.66	3,127.93	9.60	11.819	12.681	26.44	18.00
25.5	75.17	228.79	230.58	2,813.64	9.75	12.298	12.202	22.11	15.00
20.4	60.35	190.67	214.26	2,471.80	9.89	12.963	11.537	17.75	12.00
17.85	52.96	170.78	206.05	2,287.90	9.96	13.396	11.104	15.58	10.51
24 x 10 x 30.6	84.79	236.67	240.48	2,922.34	9.49	12.348	12.152	24.94	18.00
25.5	70.92	204.75	224.96	2,626.13	9.62	12.826	11.674	20.86	15.00
20.4	56.95	170.78	209.17	2,303.48	9.75	13.488	11.012	16.75	12.00
17.85	49.98	153.04	201.23	2,129.77	9.79	13.916	10.584	14.70	10.51
24 x 8 x 30.6	79.69	208.60	233.05	2,696.83	9.34	12.928	11.572	23.44	18.00
25.5	66.67	180.66	218.20	2,421.33	9.45	13.403	11.097	19.61	15.00
20.4	53.55	150.86	203.07	2,120.68	9.55	14.057	10.443	15.75	12.00
17.85	47.00	135.27	195.46	1,958.65	9.58	14.479	10.021	13.82	10.51

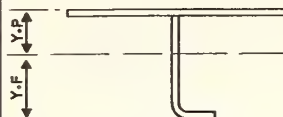


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 6 x 30.6	74.59	180.45	223.96	2,448.34	9.12	13.568	10.932	21.94	18.00
25.5	62.42	156.51	209.93	2,196.74	9.22	14.036	10.464	18.36	15.00
20.4	50.15	130.91	195.62	1,921.46	9.29	14.678	9.822	14.75	12.00
17.85	44.02	117.49	188.40	1,772.87	9.31	15.090	9.410	12.95	10.51
21 x 20 x 30.6	102.64	220.72	320.88	2,811.52	8.64	8.762	12.738	30.19	15.75
25.5	85.80	207.24	277.32	2,550.04	8.83	9.195	12.305	25.23	13.12
20.4	68.85	193.54	230.87	2,263.57	9.03	9.805	11.695	20.25	10.50
17.85	60.40	186.65	206.59	2,108.27	9.13	10.205	11.295	17.77	9.20
21 x 18 x 30.6	97.54	218.04	296.56	2,701.57	8.64	9.110	12.390	28.69	15.75
25.5	81.55	204.77	256.33	2,447.46	8.82	9.548	11.952	23.98	13.12
20.4	65.45	191.29	213.43	2,168.85	9.00	10.162	11.338	19.25	10.50
17.85	57.43	184.50	191.01	2,017.76	9.10	10.564	10.936	16.89	9.20
21 x 16 x 30.6	92.44	214.95	272.16	2,582.11	8.63	9.487	12.013	27.19	15.75
25.5	77.30	201.93	235.29	2,336.39	8.79	9.930	11.570	22.73	13.12
20.4	62.05	188.69	195.96	2,066.77	8.96	10.547	10.953	18.25	10.50
17.85	54.45	175.40	182.02	1,920.51	9.04	10.949	10.551	16.01	9.20
21 x 14 x 30.6	87.34	211.35	247.68	2,451.85	8.60	9.899	11.601	25.69	15.75
25.5	73.05	198.62	214.19	2,215.75	8.74	10.345	11.155	21.48	13.12
20.4	58.65	178.46	185.67	1,956.44	8.89	10.963	10.537	17.25	10.50
17.85	51.47	159.78	179.14	1,815.74	8.96	11.364	10.136	15.14	9.20
21 x 12 x 30.6	82.24	207.11	223.12	2,309.28	8.54	10.350	11.150	24.19	15.75
25.5	68.80	193.04	194.73	2,084.23	8.67	10.797	10.703	20.23	13.12
20.4	55.25	160.93	182.11	1,836.83	8.79	11.414	10.086	16.25	10.50
17.85	48.49	144.13	175.75	1,702.53	8.84	11.813	9.687	14.26	9.20
21 x 10 x 30.6	77.14	198.47	202.03	2,152.54	8.44	10.846	10.654	22.69	15.75
25.5	64.55	171.84	190.07	1,940.31	8.56	11.292	10.208	18.98	13.12
20.4	51.85	143.37	177.86	1,706.70	8.66	11.905	9.595	15.25	10.50
17.85	45.51	128.45	171.70	1,579.83	8.70	12.299	9.201	13.39	9.20
21 x 8 x 30.6	72.04	173.74	195.85	1,979.42	8.31	11.393	10.107	21.19	15.75
25.5	60.30	150.58	184.40	1,782.13	8.40	11.835	9.665	17.73	13.12
20.4	48.45	125.77	172.70	1,564.60	8.48	12.440	9.060	14.25	10.50
17.85	42.53	112.75	166.79	1,446.39	8.50	12.828	8.672	12.51	9.20
21 x 6 x 30.6	66.94	148.92	188.15	1,787.20	8.11	12.001	9.499	19.69	15.75
25.5	56.05	129.26	177.35	1,607.47	8.19	12.436	9.064	16.48	13.12
20.4	45.05	108.14	166.29	1,408.81	8.24	13.028	8.472	13.25	10.50
17.85	39.56	97.03	160.69	1,300.72	8.24	13.405	8.095	11.63	9.20
18 x 18 x 30.6	89.89	178.37	247.00	1,916.13	7.51	7.758	10.742	26.44	13.50
25.5	75.17	168.63	213.79	1,744.04	7.67	8.158	10.342	22.11	11.25
20.4	60.35	158.69	178.14	1,552.67	7.84	8.716	9.784	17.75	9.00
15.3	45.42	139.65	148.50	1,331.43	7.99	9.534	8.966	13.36	6.75
18 x 16 x 30.6	84.79	176.00	226.01	1,830.52	7.51	8.099	10.401	24.94	13.50
25.5	70.92	166.43	195.64	1,663.67	7.66	8.504	9.996	20.86	11.25
20.4	56.95	156.65	163.05	1,478.02	7.81	9.065	9.435	16.75	9.00
15.3	42.87	127.85	146.61	1,263.46	7.93	9.882	8.618	12.61	6.75
18 x 14 x 30.6	79.69	173.21	204.94	1,736.62	7.49	8.474	10.026	23.44	13.50
25.5	66.67	163.84	177.44	1,575.89	7.62	8.881	9.619	19.61	11.25
20.4	53.55	147.92	154.26	1,396.95	7.75	9.444	9.056	15.75	9.00
15.3	40.32	116.03	144.41	1,190.22	7.84	10.258	8.242	11.86	6.75
18 x 12 x 30.6	74.59	169.88	183.78	1,633.15	7.45	8.886	9.614	21.94	13.50
25.5	62.42	159.18	160.75	1,479.63	7.56	9.296	9.204	18.36	11.25
20.4	50.15	132.75	151.41	1,308.60	7.67	9.857	8.643	14.75	9.00
15.3	37.77	104.19	141.79	1,111.09	7.73	10.664	7.836	11.11	6.75
18 x 10 x 30.6	69.49	162.53	165.84	1,518.58	7.37	9.343	9.157	20.44	13.50
25.5	58.17	140.86	157.02	1,373.60	7.47	9.752	8.748	17.11	11.25
20.4	46.75	117.55	147.97	1,211.93	7.55	10.310	8.190	13.75	9.00
15.3	35.22	92.34	138.63	1,025.30	7.58	11.104	7.396	10.36	6.75



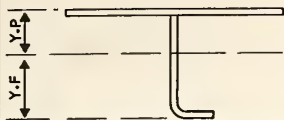
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 8 x 30.6	64.39	141.19	160.85	1,391.02	7.25	9.852	8.648	18.94	13.50
25.5	53.92	122.48	152.40	1,256.22	7.33	10.257	8.243	15.86	11.25
20.4	43.35	102.32	143.72	1,105.72	7.39	10.806	7.694	12.75	9.00
15.3	32.67	80.47	134.73	932.00	7.38	11.582	6.918	9.61	6.75
18 x 6 x 30.6	59.29	119.76	154.51	1,248.12	7.07	10.422	8.078	17.44	13.50
25.5	49.67	104.04	146.54	1,125.58	7.14	10.819	7.681	14.61	11.25
20.4	39.95	87.05	138.34	988.47	7.17	11.355	7.145	11.75	9.00
15.3	30.12	68.58	129.81	830.15	7.12	12.105	6.395	8.86	6.75
18 x 4 x 30.6	54.19	98.23	146.20	1,086.94	6.81	11.065	7.435	15.94	13.50
25.5	45.42	85.54	138.88	979.28	6.85	11.449	7.051	13.36	11.25
20.4	36.55	71.75	131.31	858.38	6.86	11.963	6.537	10.75	9.00
15.3	27.57	56.68	123.40	718.50	6.78	12.677	5.823	8.11	6.75
16 x 12 x 30.6	69.49	146.35	158.78	1,256.57	6.71	7.914	8.586	20.44	12.00
25.5	58.17	137.65	139.15	1,141.73	6.81	8.295	8.205	17.11	10.00
20.4	46.75	114.84	131.74	1,012.40	6.90	8.815	7.685	13.75	8.00
15.3	35.22	90.11	124.07	861.30	6.94	9.558	6.942	10.36	6.00
16 x 10 x 30.6	64.39	139.83	142.97	1,166.41	6.64	8.342	8.158	18.94	12.00
25.5	53.92	121.28	135.99	1,057.78	6.73	8.722	7.778	15.86	10.00
20.4	43.35	101.25	128.81	935.39	6.80	9.238	7.262	12.75	8.00
15.3	32.67	79.50	121.35	792.55	6.81	9.969	6.531	9.61	6.00
16 x 8 x 30.6	59.29	120.79	138.74	1,065.42	6.54	8.821	7.679	17.44	12.00
25.5	49.67	104.85	132.05	964.35	6.60	9.197	7.303	14.61	10.00
20.4	39.95	87.62	125.15	850.38	6.65	9.705	6.795	11.75	8.00
15.3	30.12	68.88	117.95	717.50	6.62	10.417	6.083	8.86	6.00
16 x 6 x 30.6	54.19	101.64	133.29	951.50	6.37	9.361	7.139	15.94	12.00
25.5	45.42	88.36	126.98	859.72	6.42	9.730	6.770	13.36	10.00
20.4	36.55	73.95	120.46	756.05	6.44	10.223	6.277	10.75	8.00
15.3	27.57	58.23	113.61	635.23	6.38	10.909	5.591	8.11	6.00
15 x 12 x 30.6	66.94	134.97	146.65	1,089.40	6.33	7.429	8.071	19.69	11.25
25.5	56.05	127.20	128.66	991.39	6.43	7.794	7.706	16.48	9.37
20.4	45.05	106.15	122.15	880.33	6.51	8.293	7.207	13.25	7.50
15.3	33.95	83.29	115.37	749.73	6.55	9.002	6.498	9.98	5.62
15 x 11 x 30.6	64.39	133.52	137.77	1,050.99	6.31	7.629	7.871	18.94	11.25
25.5	53.92	119.52	127.30	955.45	6.40	7.994	7.506	15.86	9.37
20.4	43.35	99.77	120.88	847.18	6.47	8.492	7.008	12.75	7.50
15.3	32.67	78.30	114.18	719.96	6.49	9.195	6.305	9.61	5.62
15 x 10 x 30.6	61.84	128.86	131.91	1,010.34	6.27	7.841	7.659	18.19	11.25
25.5	51.80	111.82	125.79	917.54	6.35	8.206	7.294	15.23	9.37
20.4	41.65	93.37	119.47	812.35	6.41	8.700	6.800	12.25	7.50
15.3	31.40	73.31	112.86	688.85	6.42	9.397	6.103	9.23	5.62
15 x 9 x 30.6	59.29	119.93	130.10	967.25	6.23	8.065	7.435	17.44	11.25
25.5	49.67	104.11	124.09	877.48	6.30	8.429	7.071	14.61	9.37
20.4	39.95	86.97	117.88	775.71	6.35	8.920	6.580	11.75	7.50
15.3	30.12	68.31	111.38	656.31	6.33	9.608	5.892	8.86	5.62
15 x 8 x 30.6	56.74	110.98	128.05	921.49	6.17	8.304	7.196	16.69	11.25
25.5	47.55	96.38	122.18	835.09	6.23	8.665	6.835	13.98	9.37
20.4	38.25	80.55	116.10	737.11	6.27	9.151	6.349	11.25	7.50
15.3	28.85	63.31	109.72	622.25	6.24	9.829	5.671	8.48	5.62
15 x 7 x 30.6	54.19	101.99	125.71	872.80	6.10	8.557	6.943	15.94	11.25
25.5	45.42	88.63	120.00	790.16	6.15	8.915	6.585	13.36	9.37
20.4	36.55	74.13	114.07	696.40	6.18	9.395	6.105	10.75	7.50
15.3	27.57	58.30	107.83	586.55	6.13	10.060	5.440	8.11	5.62



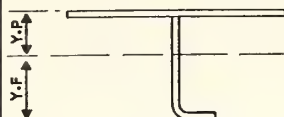
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

20.4 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	I	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ²	IN.	IN.	IN.	IN. ²	IN. ²
14 x 10 x 30.6	59.29	118.14	121.10	867.12	5.90	7.340	7.160	17.44	10.50
25.5	49.67	102.58	115.78	788.64	5.97	7.688	6.812	14.61	8.75
20.4	39.95	85.68	110.27	699.12	6.03	8.160	6.340	11.75	7.00
15.3	30.12	67.26	104.48	593.33	6.02	8.821	5.679	8.86	5.25
14 x 9 x 30.6	56.74	109.80	119.46	829.58	5.86	7.555	6.945	16.69	10.50
25.5	47.55	95.36	114.24	753.63	5.92	7.903	6.597	13.98	8.75
20.4	38.25	79.68	108.82	666.99	5.96	8.371	6.129	11.25	7.00
15.3	28.85	62.58	103.12	564.72	5.94	9.024	5.476	8.48	5.25
14 x 8 x 30.6	54.19	101.43	117.60	789.63	5.80	7.785	6.715	15.94	10.50
25.5	45.42	88.13	112.49	716.52	5.86	8.130	6.370	13.36	8.75
20.4	36.55	73.67	107.18	633.10	5.89	8.593	5.907	10.75	7.00
15.3	27.57	57.90	101.58	534.73	5.85	9.236	5.264	8.11	5.25
14 x 7 x 30.6	51.64	93.03	115.47	747.05	5.74	8.030	6.470	15.19	10.50
25.5	43.30	80.88	110.49	677.12	5.78	8.372	6.128	12.73	8.75
20.4	34.85	67.66	105.31	597.31	5.80	8.828	5.672	10.25	7.00
15.3	26.30	53.21	99.83	503.27	5.75	9.459	5.041	7.73	5.25
13 x 9 x 30.6	54.19	99.92	109.07	703.99	5.48	7.045	6.455	15.94	9.75
25.5	45.42	86.84	104.58	640.50	5.54	7.376	6.124	13.36	8.12
20.4	36.55	72.58	99.91	567.56	5.58	7.819	5.681	10.75	6.50
15.3	27.57	57.01	94.95	480.88	5.55	8.436	5.064	8.11	4.87
13 x 8 x 30.6	51.64	92.14	107.39	669.48	5.43	7.266	6.234	15.19	9.75
25.5	43.30	80.11	103.00	608.33	5.48	7.594	5.906	12.73	8.12
20.4	34.85	66.99	98.42	538.09	5.51	8.033	5.467	10.25	6.50
15.3	26.30	52.64	93.54	454.74	5.46	8.639	4.861	7.73	4.87
13 x 7 x 30.6	49.09	84.33	105.46	632.62	5.37	7.501	5.999	14.44	9.75
25.5	41.17	73.36	101.18	574.12	5.41	7.826	5.674	12.11	8.12
20.4	33.15	61.38	96.71	506.92	5.42	8.258	5.242	9.75	6.50
15.3	25.02	48.27	91.93	427.27	5.36	8.852	4.648	7.36	4.87
12 x 9 x 30.6	51.64	90.31	98.92	590.12	5.10	6.534	5.966	15.19	9.00
25.5	43.30	78.54	95.12	537.76	5.16	6.847	5.653	12.73	7.50
20.4	34.85	65.68	91.14	477.15	5.18	7.265	5.235	10.25	6.00
15.3	26.30	51.58	86.89	404.60	5.15	7.843	4.657	7.73	4.50
12 x 8 x 30.6	49.09	83.12	97.42	560.66	5.06	6.745	5.755	14.44	9.00
25.5	41.17	72.32	93.70	510.20	5.10	7.055	5.445	12.11	7.50
20.4	33.15	60.50	89.79	451.82	5.12	7.468	5.032	9.75	6.00
15.3	25.02	47.54	85.60	382.06	5.07	8.037	4.463	7.36	4.50
12 x 7 x 30.6	46.54	75.91	95.69	529.11	5.00	6.970	5.530	13.69	9.00
25.5	39.05	66.07	92.06	480.83	5.03	7.277	5.223	11.48	7.50
20.4	31.45	55.31	88.24	424.98	5.04	7.684	4.816	9.25	6.00
15.3	23.75	43.49	84.12	358.35	4.97	8.240	4.260	6.98	4.50
12 x 6 x 30.6	43.99	68.67	93.66	495.26	4.92	7.212	5.288	12.94	9.00
25.5	36.92	59.82	90.15	449.46	4.95	7.514	4.986	10.86	7.50
20.4	29.75	50.11	86.43	396.49	4.94	7.913	4.587	8.75	6.00
15.3	22.47	39.44	82.39	333.39	4.86	8.454	4.046	6.61	4.50



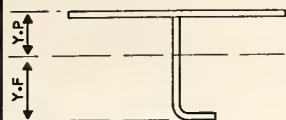
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 30.6	151.09	426.68	683.48	8,028.60	12.20	11.747	18.816	44.44	22.50
25.5	126.17	397.97	588.29	7,255.19	12.48	12.333	18.230	37.11	18.75
20.4	101.15	368.95	487.97	6,421.23	12.79	13.159	17.404	29.75	15.00
17.85	88.70	354.43	435.97	5,974.96	12.96	13.705	16.858	26.09	13.14
30 x 27 x 30.6	143.44	421.63	631.04	7,724.88	12.22	12.242	18.321	42.19	22.50
25.5	119.80	393.36	543.21	6,972.87	12.48	12.836	17.727	35.23	18.75
20.4	96.05	364.77	450.65	6,161.30	12.77	13.672	16.891	28.25	15.00
17.85	84.23	350.45	402.67	5,726.80	12.92	14.222	16.341	24.77	13.14
30 x 24 x 30.6	135.79	415.80	578.45	7,393.52	12.23	12.782	17.781	39.94	22.50
25.5	113.42	388.03	498.04	6,665.85	12.47	13.384	17.179	33.36	18.75
20.4	90.95	359.94	413.28	5,879.86	12.73	14.227	16.336	26.75	15.00
17.85	79.76	345.87	369.34	5,458.85	12.87	14.780	15.783	23.46	13.14
30 x 21 x 30.6	128.14	408.99	525.73	7,030.58	12.21	13.373	17.190	37.69	22.50
25.5	107.05	381.81	452.78	6,330.76	12.43	13.982	16.581	31.48	18.75
20.4	85.85	354.31	375.86	5,574.14	12.66	14.831	15.732	25.25	15.00
17.85	75.30	335.97	340.53	5,168.67	12.78	15.385	15.178	22.15	13.14
30 x 18 x 30.6	120.49	400.94	472.86	6,631.31	12.15	14.024	16.539	35.44	22.50
25.5	100.67	374.46	407.42	5,963.54	12.35	14.637	15.926	29.61	18.75
20.4	80.75	338.38	347.65	5,240.83	12.55	15.488	15.075	23.75	15.00
17.85	70.83	302.55	334.21	4,853.34	12.65	16.041	14.522	20.83	13.14
30 x 15 x 30.6	112.84	391.28	419.86	6,189.96	12.04	14.743	15.820	33.19	22.50
25.5	94.30	361.97	365.64	5,559.36	12.22	15.359	15.204	27.73	18.75
20.4	75.65	300.84	339.67	4,876.05	12.39	16.208	14.355	22.25	15.00
17.85	66.36	269.10	326.65	4,509.48	12.46	16.758	13.805	19.52	13.14
30 x 12 x 30.6	105.19	366.71	379.45	5,699.52	11.87	15.542	15.021	30.94	22.50
25.5	87.92	316.43	354.86	5,112.32	12.02	16.156	14.407	25.86	18.75
20.4	70.55	263.26	329.93	4,475.10	12.16	16.999	13.564	20.75	15.00
17.85	61.89	235.61	317.41	4,133.00	12.21	17.542	13.021	18.20	13.14
30 x 9 x 30.6	97.54	313.42	364.64	5,151.32	11.61	16.436	14.127	28.69	22.50
25.5	81.55	270.80	341.37	4,615.24	11.74	17.043	13.520	23.98	18.75
20.4	65.45	225.61	317.75	4,032.32	11.84	17.873	12.690	19.25	15.00
17.85	57.43	202.08	305.87	3,719.04	11.87	18.404	12.159	16.89	13.14
30 x 6 x 30.6	89.89	259.99	345.57	4,534.49	11.23	17.441	13.122	26.44	22.50
25.5	75.17	225.07	324.02	4,059.20	11.33	18.035	12.528	22.11	18.75
20.4	60.35	187.92	302.10	3,540.82	11.40	18.842	11.721	17.75	15.00
17.85	52.96	168.50	291.06	3,261.71	11.40	19.357	11.206	15.58	13.14
27 x 27 x 30.6	135.79	366.58	558.29	6,099.24	11.11	10.925	16.638	39.94	20.25
25.5	113.42	343.58	480.91	5,523.71	11.35	11.486	16.077	33.36	16.87
20.4	90.95	320.28	399.08	4,897.42	11.62	12.272	15.291	26.75	13.50
17.85	79.76	308.60	356.56	4,559.61	11.76	12.788	14.775	23.46	11.83
27 x 24 x 30.6	128.14	361.74	510.75	5,836.77	11.12	11.428	16.135	37.69	20.25
25.5	107.05	339.13	440.01	5,278.86	11.35	11.997	15.566	31.48	16.87
20.4	85.85	316.22	365.20	4,671.24	11.59	12.791	14.772	25.25	13.50
17.85	75.30	304.72	326.34	4,343.40	11.71	13.309	14.254	22.15	11.83
27 x 21 x 30.6	120.49	356.06	463.06	5,548.03	11.11	11.981	15.582	35.44	20.25
25.5	100.67	333.90	399.02	5,010.54	11.32	12.557	15.006	29.61	16.87
20.4	80.75	311.45	331.28	4,424.67	11.53	13.356	14.207	23.75	13.50
17.85	70.83	296.07	300.18	4,108.46	11.64	13.876	13.687	20.83	11.83
27 x 18 x 30.6	112.84	349.29	415.23	5,228.87	11.07	12.593	14.970	33.19	20.25
25.5	94.30	327.69	357.93	4,715.21	11.25	13.174	14.389	27.73	16.87
20.4	75.65	297.29	305.78	4,154.80	11.44	13.975	13.588	22.25	13.50
17.85	66.36	265.77	294.78	3,852.25	11.52	14.495	13.068	19.52	11.83



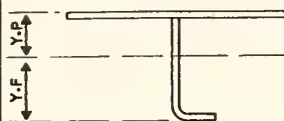
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 15 x 30.6	105.19	341.08	367.24	4,874.21	10.98	13.273	14.290	30.94	20.25
25.5	87.92	316.74	320.16	4,388.56	11.14	13.855	13.708	25.86	16.87
20.4	70.55	263.25	298.92	3,858.18	11.29	14.656	12.907	20.75	13.50
17.85	61.89	235.42	288.24	3,571.74	11.35	15.172	12.391	18.20	11.83
27 x 12 x 30.6	97.54	319.11	330.94	4,477.78	10.83	14.032	13.531	28.69	20.25
25.5	81.55	275.45	310.85	4,025.35	10.96	14.614	12.949	23.98	16.87
20.4	65.45	229.15	290.45	3,530.61	11.08	15.407	12.156	19.25	13.50
17.85	57.43	205.03	280.18	3,263.31	11.12	15.916	11.647	16.89	11.83
27 x 9 x 30.6	89.89	270.82	318.07	4,031.73	10.59	14.887	12.676	26.44	20.25
25.5	75.17	234.07	299.07	3,619.07	10.70	15.462	12.101	22.11	16.87
20.4	60.35	194.99	279.73	3,167.00	10.78	16.241	11.322	17.75	13.50
17.85	52.96	174.60	269.99	2,922.57	10.79	16.738	10.825	15.58	11.83
27 x 6 x 30.6	82.24	222.38	301.21	3,526.12	10.23	15.856	11.707	24.19	20.25
25.5	68.80	192.58	283.65	3,161.57	10.31	16.417	11.146	20.23	16.87
20.4	55.25	160.78	265.73	2,761.04	10.35	17.173	10.390	16.25	13.50
17.85	48.49	144.13	256.69	2,544.15	10.35	17.651	9.912	14.26	11.83
24 x 24 x 30.6	120.49	310.22	445.07	4,490.18	10.00	10.089	14.474	35.44	18.00
25.5	100.67	292.29	383.70	4,075.18	10.21	10.621	13.942	29.61	15.00
20.4	80.75	274.08	318.55	3,618.73	10.43	11.360	13.203	23.75	12.00
17.85	70.83	264.93	284.62	3,370.33	10.54	11.841	12.722	20.83	10.51
24 x 22 x 30.6	115.39	307.22	416.69	4,343.69	10.00	10.424	14.139	33.94	18.00
25.5	96.42	289.51	359.27	3,937.94	10.20	10.961	13.602	28.36	15.00
20.4	77.35	271.53	298.30	3,491.45	10.40	11.704	12.859	22.75	12.00
17.85	67.85	262.48	266.55	3,248.46	10.50	12.187	12.376	19.96	10.51
24 x 20 x 30.6	110.29	303.84	388.25	4,186.72	9.99	10.784	13.779	32.44	18.00
25.5	92.17	286.38	334.79	3,791.32	10.18	11.324	13.239	27.11	15.00
20.4	73.95	268.65	278.03	3,356.03	10.36	12.071	12.492	21.75	12.00
17.85	64.87	248.46	259.73	3,119.13	10.45	12.554	12.009	19.08	10.51
24 x 18 x 30.6	105.19	300.01	359.74	4,018.11	9.97	11.170	13.393	30.94	18.00
25.5	87.92	282.84	310.27	3,634.35	10.14	11.714	12.849	25.86	15.00
20.4	70.55	257.73	265.39	3,211.66	10.30	12.461	12.102	20.75	12.00
17.85	61.89	230.35	256.61	2,981.63	10.37	12.944	11.619	18.20	10.51
24 x 16 x 30.6	100.09	295.63	331.15	3,836.53	9.93	11.585	12.978	29.44	18.00
25.5	83.67	278.79	285.70	3,465.87	10.08	12.131	12.432	24.61	15.00
20.4	67.15	237.40	261.67	3,057.42	10.22	12.879	11.684	19.75	12.00
17.85	58.92	212.23	253.05	2,835.14	10.28	13.359	11.204	17.33	10.51
24 x 14 x 30.6	94.99	290.57	302.50	3,640.40	9.86	12.034	12.529	27.94	18.00
25.5	79.42	261.08	274.12	3,284.58	10.00	12.581	11.982	23.36	15.00
20.4	63.75	217.04	257.38	2,892.27	10.12	13.326	11.237	18.75	12.00
17.85	55.94	194.08	248.94	2,678.78	10.16	13.802	10.761	16.45	10.51
24 x 12 x 30.6	89.89	273.77	284.66	3,427.90	9.77	12.521	12.042	26.44	18.00
25.5	75.17	236.41	268.67	3,088.96	9.88	13.066	11.497	22.11	15.00
20.4	60.35	196.66	252.38	2,715.00	9.98	13.806	10.757	17.75	12.00
17.85	52.96	175.91	244.16	2,511.49	10.01	14.277	10.286	15.58	10.51
24 x 10 x 30.6	84.79	244.98	277.68	3,196.91	9.63	13.050	11.513	24.94	18.00
25.5	70.92	211.70	262.23	2,877.24	9.73	13.591	10.972	20.86	15.00
20.4	56.95	176.25	246.48	2,524.23	9.80	14.322	10.241	16.75	12.00
17.85	49.98	157.73	238.52	2,332.09	9.82	14.786	9.777	14.70	10.51
24 x 8 x 30.6	79.69	216.11	269.28	2,944.89	9.45	13.627	10.936	23.44	18.00
25.5	66.67	186.95	254.50	2,647.34	9.54	14.161	10.402	19.61	15.00
20.4	53.55	155.81	239.40	2,318.35	9.58	14.879	9.684	15.75	12.00
17.85	47.00	139.52	231.76	2,139.22	9.58	15.332	9.231	13.82	10.51



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 6 x 30.6	74.59	187.16	259.01	2,668.82	9.21	14.259	10.304	21.94	18.00
25.5	62.42	162.14	245.05	2,396.83	9.27	14.782	9.781	18.36	15.00
20.4	50.15	135.35	230.76	2,095.50	9.29	15.482	9.081	14.75	12.00
17.85	44.02	121.30	223.51	1,931.31	9.27	15.922	8.641	12.95	10.51
21 x 20 x 30.6	102.64	256.20	331.45	3,115.89	8.86	9.401	12.162	30.19	15.75
25.5	85.80	242.80	286.03	2,831.75	9.03	9.900	11.663	25.23	13.12
20.4	68.85	229.15	237.59	2,515.25	9.19	10.587	10.976	20.25	10.50
17.85	60.40	212.29	222.26	2,341.32	9.27	11.029	10.534	17.77	9.20
21 x 18 x 30.6	97.54	253.13	306.38	2,988.82	8.85	9.755	11.808	28.69	15.75
25.5	81.55	239.94	264.42	2,712.51	9.00	10.258	11.305	23.98	13.12
20.4	65.45	219.68	226.49	2,404.66	9.14	10.946	10.617	19.25	10.50
17.85	57.43	196.32	219.70	2,235.55	9.20	11.387	10.176	16.89	9.20
21 x 16 x 30.6	92.44	249.59	281.23	2,851.37	8.82	10.139	11.424	27.19	15.75
25.5	77.30	236.65	242.77	2,584.03	8.95	10.644	10.919	22.73	13.12
20.4	62.05	201.75	223.44	2,286.11	9.08	11.331	10.232	18.25	10.50
17.85	54.45	180.32	216.76	2,122.51	9.12	11.771	9.792	16.01	9.20
21 x 14 x 30.6	87.34	245.48	256.01	2,702.20	8.76	10.555	11.008	25.69	15.75
25.5	73.05	221.08	232.82	2,445.19	8.88	11.060	10.503	21.48	13.12
20.4	58.65	183.79	219.89	2,158.71	8.98	11.746	9.817	17.25	10.50
17.85	51.47	164.30	213.34	2,001.45	9.01	12.181	9.382	15.14	9.20
21 x 12 x 30.6	82.24	230.72	240.63	2,539.77	8.68	11.008	10.555	24.19	15.75
25.5	68.80	199.33	228.31	2,294.68	8.78	11.512	10.051	20.23	13.12
20.4	55.25	165.80	215.71	2,021.41	8.86	12.192	9.371	16.25	10.50
17.85	48.49	148.27	209.32	1,871.46	8.87	12.622	8.941	14.26	9.20
21 x 10 x 30.6	77.14	205.34	234.82	2,362.20	8.57	11.504	10.059	22.69	15.75
25.5	64.55	177.53	222.92	2,130.97	8.65	12.004	9.559	18.98	13.12
20.4	51.85	147.78	210.72	1,873.02	8.70	12.674	8.889	15.25	10.50
17.85	45.51	132.21	204.52	1,731.52	8.70	13.097	8.466	13.39	9.20
21 x 8 x 30.6	72.04	179.90	227.76	2,167.28	8.40	12.047	9.516	21.19	15.75
25.5	60.30	155.68	216.36	1,952.24	8.47	12.540	9.023	17.73	13.12
20.4	48.45	129.73	204.66	1,712.14	8.49	13.197	8.366	14.25	10.50
17.85	42.53	116.13	198.71	1,580.45	8.47	13.609	7.954	12.51	9.20
21 x 6 x 30.6	66.94	154.37	218.97	1,952.34	8.18	12.647	8.916	19.69	15.75
25.5	56.05	133.78	208.22	1,756.32	8.22	13.128	8.435	16.48	13.12
20.4	45.05	111.66	197.15	1,537.12	8.22	13.766	7.797	13.25	10.50
17.85	39.56	100.03	191.50	1,416.86	8.19	14.164	7.399	11.63	9.20
18 x 18 x 30.6	89.89	208.67	255.12	2,130.77	7.70	8.352	10.211	26.44	13.50
25.5	75.17	199.00	220.40	1,941.24	7.84	8.808	9.755	22.11	11.25
20.4	60.35	183.17	189.08	1,727.06	7.96	9.429	9.134	17.75	9.00
15.3	45.42	143.07	178.81	1,475.38	8.03	10.312	8.251	13.36	6.75
18 x 16 x 30.6	84.79	205.92	233.48	2,031.10	7.68	8.699	9.864	24.94	13.50
25.5	70.92	196.41	201.72	1,847.27	7.80	9.158	9.405	20.86	11.25
20.4	56.95	167.67	186.65	1,639.58	7.90	9.779	8.784	16.75	9.00
15.3	42.87	131.00	176.52	1,395.88	7.94	10.655	7.908	12.61	6.75
18 x 14 x 30.6	79.69	202.68	211.75	1,922.35	7.64	9.078	9.485	23.44	13.50
25.5	66.67	182.99	193.36	1,745.23	7.74	9.537	9.026	19.61	11.25
20.4	53.55	152.15	183.79	1,545.17	7.82	10.156	8.407	15.75	9.00
15.3	40.32	118.92	173.84	1,310.81	7.83	11.023	7.540	11.86	6.75
18 x 12 x 30.6	74.59	189.94	198.83	1,803.24	7.57	9.494	9.069	21.94	13.50
25.5	62.42	164.21	189.75	1,634.04	7.66	9.951	8.612	18.36	11.25
20.4	50.15	136.59	180.40	1,442.98	7.71	10.564	7.999	14.75	9.00
15.3	37.77	106.82	170.66	1,219.54	7.69	11.417	7.146	11.11	6.75



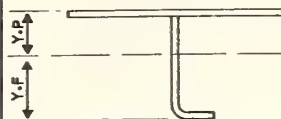
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

22.95 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 10 x 30.6	69.49	168.06	194.16	1,672.20	7.47	9.950	8.613	20.44	13.50
25.5	58.17	145.37	185.37	1,512.42	7.54	10.404	8.159	17.11	11.25
20.4	46.75	121.01	176.30	1,332.00	7.57	11.008	7.555	13.75	9.00
15.3	35.22	94.70	166.82	1,121.39	7.51	11.841	6.722	10.36	6.75
18 x 8 x 30.6	64.39	146.08	188.38	1,527.35	7.33	10.455	8.108	18.94	13.50
25.5	53.92	126.48	179.96	1,378.81	7.37	10.901	7.662	15.86	11.25
20.4	43.35	105.39	171.25	1,211.05	7.38	11.491	7.072	12.75	9.00
15.3	32.67	82.58	162.10	1,015.53	7.29	12.298	6.265	9.61	6.75
18 x 6 x 30.6	59.29	124.03	181.06	1,366.38	7.12	11.016	7.547	17.44	13.50
25.5	49.67	107.54	173.11	1,231.35	7.15	11.450	7.113	14.61	11.25
20.4	39.95	89.75	164.86	1,078.72	7.12	12.020	6.543	11.75	9.00
15.3	30.12	70.43	156.15	901.03	7.00	12.793	5.770	8.86	6.75
18 x 4 x 30.6	54.19	101.89	171.47	1,186.44	6.83	11.644	6.919	15.94	13.50
25.5	45.42	88.55	164.17	1,067.78	6.83	12.059	6.504	13.36	11.25
20.4	36.55	74.07	156.54	933.34	6.79	12.601	5.962	10.75	9.00
15.3	27.57	58.28	148.42	776.78	6.64	13.329	5.234	8.11	6.75
16 x 12 x 30.6	69.49	164.04	172.20	1,391.45	6.82	8.483	8.080	20.44	12.00
25.5	58.17	141.89	165.03	1,263.68	6.89	8.906	7.657	17.11	10.00
20.4	46.75	118.05	157.61	1,117.93	6.93	9.470	7.093	13.75	8.00
15.3	35.22	92.28	149.80	945.80	6.90	10.249	6.314	10.36	6.00
16 x 10 x 30.6	64.39	144.51	168.25	1,287.59	6.73	8.910	7.653	18.94	12.00
25.5	53.92	125.07	161.30	1,166.78	6.78	9.329	7.234	15.86	10.00
20.4	43.35	104.11	154.08	1,029.08	6.80	9.884	6.679	12.75	8.00
15.3	32.67	81.45	146.45	866.89	6.73	10.644	5.919	9.61	6.00
16 x 8 x 30.6	59.29	124.89	163.30	1,172.16	6.60	9.385	7.178	17.44	12.00
25.5	49.67	108.18	156.63	1,059.84	6.63	9.797	6.766	14.61	10.00
20.4	39.95	90.15	149.68	931.88	6.62	10.337	6.226	11.75	8.00
15.3	30.12	70.59	142.30	781.53	6.52	11.071	5.492	8.86	6.00
16 x 6 x 30.6	54.19	105.19	156.94	1,043.14	6.40	9.916	6.647	15.94	12.00
25.5	45.42	91.25	150.65	941.22	6.42	10.315	6.248	13.36	10.00
20.4	36.55	76.15	144.05	825.08	6.38	10.835	5.728	10.75	8.00
15.3	27.57	59.73	136.99	688.90	6.25	11.534	5.029	8.11	6.00
15 x 12 x 30.6	66.94	151.47	159.26	1,208.20	6.43	7.977	7.586	19.69	11.25
25.5	56.05	131.07	152.97	1,098.57	6.50	8.381	7.182	16.48	9.37
20.4	45.05	109.06	146.43	972.80	6.54	8.920	6.643	13.25	7.50
15.3	33.95	85.24	139.51	823.48	6.50	9.660	5.903	9.98	5.62
15 x 11 x 30.6	64.39	142.31	157.55	1,163.69	6.40	8.177	7.386	18.94	11.25
25.5	53.92	123.17	151.35	1,056.85	6.45	8.580	6.983	15.86	9.37
20.4	43.35	102.52	144.89	934.37	6.48	9.114	6.449	12.75	7.50
15.3	32.67	80.15	138.04	789.17	6.43	9.846	5.717	9.61	5.62
15 x 10 x 30.6	61.84	133.13	155.65	1,116.76	6.35	8.388	7.175	18.19	11.25
25.5	51.80	115.26	149.55	1,013.03	6.40	8.789	6.774	15.23	9.37
20.4	41.65	95.96	143.18	894.17	6.41	9.318	6.245	12.25	7.50
15.3	31.40	75.05	136.41	753.48	6.34	10.039	5.524	9.23	5.62
15 x 9 x 30.6	59.29	123.93	153.52	1,067.22	6.29	8.611	6.952	17.44	11.25
25.5	49.67	107.33	147.53	966.94	6.33	9.009	6.554	14.61	9.37
20.4	39.95	89.40	141.27	852.07	6.33	9.531	6.032	11.75	7.50
15.3	30.12	69.95	134.59	716.33	6.25	10.241	5.322	8.86	5.62
15 x 8 x 30.6	56.74	114.71	151.11	1,014.85	6.22	8.847	6.716	16.69	11.25
25.5	47.55	99.39	145.25	918.39	6.25	9.240	6.323	13.98	9.37
20.4	38.25	82.82	139.11	807.95	6.24	9.755	5.808	11.25	7.50
15.3	28.85	64.85	132.54	677.64	6.14	10.450	5.113	8.48	5.62



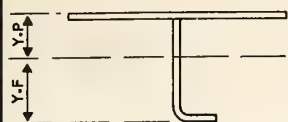
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
15 x 7 x 30.6	54.19	105.46	148.37	959.40	6.14	9.097	6.466	15.94	11.25
25.5	45.42	91.44	142.66	867.20	6.16	9.484	6.079	13.36	9.37
20.4	36.55	76.24	136.66	761.66	6.13	9.990	5.573	10.75	7.50
15.3	27.57	59.74	130.21	637.30	6.01	10.669	4.894	8.11	5.62
14 x 10 x 30.6	59.29	122.02	143.30	959.75	5.97	7.865	6.698	17.44	10.50
25.5	49.67	105.68	137.99	871.56	6.01	8.247	6.316	14.61	8.75
20.4	39.95	88.00	132.43	769.93	6.02	8.749	5.814	11.75	7.00
15.3	30.12	68.82	126.46	649.02	5.94	9.431	5.132	8.86	5.25
14 x 9 x 30.6	56.74	113.42	141.36	916.44	5.91	8.080	6.483	16.69	10.50
25.5	47.55	98.27	136.14	831.15	5.95	8.458	6.105	13.98	8.75
20.4	38.25	81.86	130.66	732.94	5.94	8.954	5.609	11.25	7.00
15.3	28.85	64.04	124.77	616.30	5.85	9.623	4.940	8.48	5.25
14 x 8 x 30.6	54.19	104.80	139.16	870.56	5.85	8.307	6.256	15.94	10.50
25.5	45.42	90.84	134.05	788.53	5.87	8.681	5.882	13.36	8.75
20.4	36.55	75.71	128.67	694.11	5.85	9.169	5.394	10.75	7.00
15.3	27.57	59.26	122.86	582.20	5.75	9.824	4.739	8.11	5.25
14 x 7 x 30.6	51.64	96.15	136.64	821.91	5.77	8.548	6.015	15.19	10.50
25.5	43.30	83.39	131.66	743.51	5.78	8.916	5.647	12.73	8.75
20.4	34.85	69.55	126.40	653.33	5.75	9.394	5.169	10.25	7.00
15.3	26.30	54.48	120.69	546.61	5.63	10.034	4.529	7.73	5.25
13 x 9 x 30.6	54.19	103.19	129.42	778.69	5.53	7.546	6.017	15.94	9.75
25.5	45.42	89.44	124.94	706.98	5.56	7.904	5.659	13.36	8.12
20.4	36.55	74.52	120.20	623.91	5.55	8.372	5.191	10.75	6.50
15.3	27.57	58.30	115.03	524.76	5.46	9.001	4.562	8.11	4.87
13 x 8 x 30.6	51.64	95.17	127.43	738.91	5.47	7.764	5.799	15.19	9.75
25.5	43.30	82.53	123.03	669.93	5.49	8.118	5.445	12.73	8.12
20.4	34.85	68.79	118.37	590.08	5.47	8.578	4.985	10.25	6.50
15.3	26.30	53.84	113.27	494.99	5.36	9.193	4.370	7.73	4.87
13 x 7 x 30.6	49.09	87.13	125.13	696.64	5.39	7.996	5.567	14.44	9.75
25.5	41.17	75.60	120.84	630.73	5.40	8.343	5.220	12.11	8.12
20.4	33.15	63.05	116.27	554.50	5.37	8.794	4.769	9.75	6.50
15.3	25.02	49.39	111.25	463.90	5.24	9.393	4.170	7.36	4.87
12 x 9 x 30.6	51.64	93.23	117.72	653.60	5.14	7.011	5.552	15.19	9.00
25.5	43.30	80.85	113.92	594.11	5.17	7.348	5.215	12.73	7.50
20.4	34.85	67.39	109.86	524.74	5.15	7.787	4.776	10.25	6.00
15.3	26.30	52.72	105.38	441.46	5.06	8.374	4.189	7.73	4.50
12 x 8 x 30.6	49.09	85.82	115.92	619.51	5.09	7.219	5.344	14.44	9.00
25.5	41.17	74.46	112.19	562.26	5.10	7.551	5.012	12.11	7.50
20.4	33.15	62.09	108.19	495.59	5.07	7.982	4.581	9.75	6.00
15.3	25.02	48.60	103.75	415.77	4.96	8.556	4.007	7.36	4.50
12 x 7 x 30.6	46.54	78.39	113.84	583.21	5.01	7.440	5.123	13.69	9.00
25.5	39.05	68.05	110.19	528.51	5.02	7.767	4.796	11.48	7.50
20.4	31.45	56.77	106.27	464.89	4.98	8.188	4.375	9.25	6.00
15.3	23.75	44.47	101.89	388.91	4.86	8.746	3.817	6.98	4.50
12 x 6 x 30.6	43.99	70.93	111.42	544.48	4.93	7.676	4.887	12.94	9.00
25.5	36.92	61.62	107.87	492.70	4.92	7.996	4.567	10.86	7.50
20.4	29.75	51.45	104.04	432.51	4.87	8.406	4.157	8.75	6.00
15.3	22.47	40.33	99.73	360.80	4.73	8.945	3.618	6.61	4.50



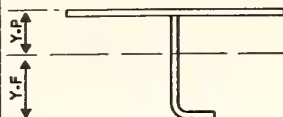
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

25.5 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 30.6	151.09	483.48	702.67	8,771.34	12.50	12.483	18.142	44.44	22.50
25.5	126.17	454.89	604.27	7,947.82	12.76	13.153	17.472	37.11	18.75
20.4	101.15	425.94	500.45	7,046.79	13.04	14.081	16.544	29.75	15.00
17.85	88.70	411.42	446.64	6,558.44	13.17	14.684	15.941	26.09	13.14
30 x 27 x 30.6	143.44	477.84	648.87	8,427.62	12.50	12.988	17.637	42.19	22.50
25.5	119.80	449.68	558.06	7,626.27	12.74	13.666	16.959	35.23	18.75
20.4	96.05	421.16	462.27	6,749.05	12.99	14.600	16.025	28.25	15.00
17.85	84.23	406.84	412.60	6,273.58	13.11	15.205	15.420	24.77	13.14
30 x 24 x 30.6	135.79	471.34	594.93	8,053.96	12.49	13.538	17.087	39.94	22.50
25.5	113.42	443.67	511.78	7,277.98	12.71	14.221	16.404	33.36	18.75
20.4	90.95	415.64	424.03	6,428.10	12.93	15.159	15.466	26.75	15.00
17.85	79.76	378.53	401.57	5,967.44	13.02	15.765	14.860	23.46	13.14
30 x 21 x 30.6	128.14	463.75	540.87	7,646.28	12.44	14.137	16.488	37.69	22.50
25.5	107.05	436.67	465.40	6,899.47	12.64	14.825	15.800	31.48	18.75
20.4	85.85	385.75	409.21	6,081.10	12.83	15.764	14.861	25.25	15.00
17.85	75.30	344.43	395.42	5,637.55	12.90	16.368	14.257	22.15	13.14
30 x 18 x 30.6	120.49	454.78	486.67	7,199.70	12.36	14.794	15.831	35.44	22.50
25.5	100.67	418.95	428.39	6,486.61	12.53	15.483	15.142	29.61	18.75
20.4	80.75	347.41	401.62	5,704.75	12.68	16.421	14.204	23.75	15.00
17.85	70.83	310.29	388.16	5,281.02	12.74	17.020	13.605	20.83	13.14
30 x 15 x 30.6	112.84	432.35	444.00	6,708.38	12.22	15.516	15.109	33.19	22.50
25.5	94.30	372.41	418.46	6,034.51	12.37	16.204	14.421	27.73	18.75
20.4	75.65	309.03	392.52	5,295.17	12.49	17.135	13.490	22.25	15.00
17.85	66.36	276.11	379.46	4,894.50	12.52	17.727	12.898	19.52	13.14
30 x 12 x 30.6	105.19	377.89	430.83	6,165.24	12.02	16.315	14.310	30.94	22.50
25.5	87.92	325.78	406.32	5,537.31	12.14	16.997	13.628	25.86	18.75
20.4	70.55	270.60	381.40	4,847.74	12.22	17.915	12.710	20.75	15.00
17.85	61.89	241.90	368.85	4,474.03	12.23	18.495	12.130	18.20	13.14
30 x 9 x 30.6	97.54	323.30	414.35	5,561.62	11.73	17.202	13.423	28.69	22.50
25.5	81.55	279.07	391.15	4,987.88	11.82	17.873	12.752	23.98	18.75
20.4	65.45	232.12	367.53	4,356.97	11.86	18.770	11.855	19.25	15.00
17.85	57.43	207.65	355.61	4,014.94	11.85	19.335	11.290	16.89	13.14
30 x 6 x 30.6	89.89	268.58	393.14	4,886.83	11.32	18.195	12.430	26.44	22.50
25.5	75.17	232.27	371.66	4,377.56	11.38	18.847	11.778	22.11	18.75
20.4	60.35	193.59	349.73	3,816.25	11.38	19.713	10.912	17.75	15.00
17.85	52.96	173.37	338.64	3,511.65	11.34	20.255	10.370	15.58	13.14
27 x 27 x 30.6	135.79	417.49	574.02	6,676.97	11.37	11.632	15.993	39.94	20.25
25.5	113.42	394.58	493.89	6,059.35	11.59	12.269	15.356	33.36	16.87
20.4	90.95	371.34	409.11	5,377.32	11.82	13.144	14.481	26.75	13.50
17.85	79.76	359.65	365.08	5,004.89	11.93	13.709	13.916	23.46	11.83
27 x 24 x 30.6	128.14	412.06	525.23	6,378.75	11.36	12.145	15.480	37.69	20.25
25.5	107.05	389.53	451.97	5,779.62	11.57	12.788	14.837	31.48	16.87
20.4	85.85	366.66	374.46	5,117.78	11.77	13.667	13.958	25.25	13.50
17.85	75.30	334.20	355.16	4,756.47	11.85	14.232	13.393	22.15	11.83
27 x 21 x 30.6	120.49	405.67	476.31	6,052.09	11.33	12.706	14.919	35.44	20.25
25.5	100.67	383.60	409.96	5,474.52	11.51	13.354	14.271	29.61	16.87
20.4	80.75	339.75	361.18	4,836.30	11.68	14.235	13.390	23.75	13.50
17.85	70.83	303.28	349.89	4,487.99	11.74	14.798	12.827	20.83	11.83
27 x 18 x 30.6	112.84	398.07	427.25	5,692.71	11.26	13.324	14.301	33.19	20.25
25.5	94.30	367.87	376.54	5,140.42	11.41	13.973	13.652	27.73	16.87
20.4	75.65	305.00	354.66	4,529.95	11.55	14.852	12.773	22.25	13.50
17.85	66.36	272.33	343.63	4,196.93	11.59	15.411	12.214	19.52	11.83



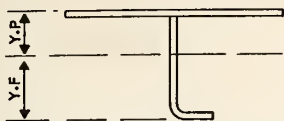
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

25.5 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 15 x 30.6	105.19	378.05	388.86	5,295.42	11.14	14.007	13.618	30.94	20.25
25.5	87.92	325.69	368.00	4,772.99	11.27	14.655	12.970	25.86	16.87
20.4	70.55	270.20	346.77	4,195.31	11.37	15.527	12.098	20.75	13.50
17.85	61.89	241.33	336.06	3,880.31	11.39	16.079	11.546	18.20	11.83
27 x 12 x 30.6	97.54	328.71	377.48	4,853.90	10.96	14.766	12.859	28.69	20.25
25.5	81.55	283.42	357.46	4,366.96	11.06	15.408	12.217	23.98	16.87
20.4	65.45	235.34	337.05	3,828.25	11.12	16.267	11.358	19.25	13.50
17.85	57.43	210.30	326.73	3,534.60	11.12	16.807	10.818	16.89	11.83
27 x 9 x 30.6	89.89	279.24	363.06	4,360.32	10.69	15.615	12.010	26.44	20.25
25.5	75.17	241.05	344.11	3,915.94	10.76	16.245	11.380	22.11	16.87
20.4	60.35	200.43	324.75	3,423.82	10.78	17.082	10.543	17.75	13.50
17.85	52.96	179.24	314.95	3,155.61	10.75	17.606	10.019	15.58	11.83
27 x 6 x 30.6	82.24	229.63	344.18	3,804.89	10.29	16.570	11.055	24.19	20.25
25.5	68.80	198.60	326.66	3,411.99	10.33	17.180	10.445	20.23	16.87
20.4	55.25	165.47	308.71	2,976.02	10.32	17.985	9.640	16.25	13.50
17.85	48.49	148.14	299.59	2,738.28	10.27	18.485	9.140	14.26	11.83
24 x 24 x 30.6	120.49	355.23	457.60	4,924.63	10.22	10.762	13.863	35.44	18.00
25.5	100.67	337.38	393.94	4,475.26	10.41	11.360	13.265	29.61	15.00
20.4	80.75	319.20	326.37	3,973.82	10.58	12.176	12.449	23.75	12.00
17.85	70.83	291.22	310.03	3,697.81	10.66	12.698	11.927	20.83	10.51
24 x 22 x 30.6	115.39	351.83	428.47	4,757.41	10.21	11.103	13.522	33.94	18.00
25.5	96.42	334.20	368.90	4,317.89	10.38	11.705	12.920	28.36	15.00
20.4	77.35	305.67	316.23	3,827.45	10.54	12.522	12.103	22.75	12.00
17.85	67.85	272.77	307.16	3,557.62	10.60	13.043	11.582	19.96	10.51
24 x 20 x 30.6	110.29	348.01	399.28	4,578.83	10.18	11.468	13.157	32.44	18.00
25.5	92.17	330.62	343.81	4,150.40	10.34	12.072	12.553	27.11	15.00
20.4	73.95	284.93	312.89	3,672.34	10.48	12.888	11.737	21.75	12.00
17.85	64.87	254.30	303.94	3,409.45	10.52	13.407	11.218	19.08	10.51
24 x 18 x 30.6	105.19	343.67	370.03	4,387.70	10.14	11.858	12.767	30.94	18.00
25.5	87.92	318.69	326.57	3,971.76	10.28	12.463	12.162	25.86	15.00
20.4	70.55	264.18	309.12	3,507.67	10.39	13.278	11.347	20.75	12.00
17.85	61.89	235.81	300.29	3,252.61	10.43	13.794	10.831	18.20	10.51
24 x 16 x 30.6	100.09	338.71	340.71	4,182.64	10.08	12.276	12.349	29.44	18.00
25.5	83.67	293.52	321.93	3,780.83	10.20	12.881	11.744	24.61	15.00
20.4	67.15	243.40	304.80	3,332.54	10.29	13.692	10.933	19.75	12.00
17.85	58.92	217.30	296.13	3,086.31	10.31	14.203	10.422	17.33	10.51
24 x 14 x 30.6	94.99	311.33	332.99	3,962.08	10.00	12.726	11.899	27.94	18.00
25.5	79.42	268.32	316.59	3,576.30	10.10	13.329	11.296	23.36	15.00
20.4	63.75	222.60	299.83	3,145.91	10.16	14.133	10.492	18.75	12.00
17.85	55.94	198.78	291.34	2,909.66	10.16	14.638	9.987	16.45	10.51
24 x 12 x 30.6	89.89	281.88	326.31	3,724.17	9.88	13.212	11.413	26.44	18.00
25.5	75.17	243.07	310.36	3,356.66	9.96	13.810	10.815	22.11	15.00
20.4	60.35	201.77	294.04	2,946.62	10.00	14.604	10.021	17.75	12.00
17.85	52.96	180.24	285.76	2,721.68	9.99	15.101	9.524	15.58	10.51
24 x 10 x 30.6	84.79	252.36	318.42	3,466.80	9.73	13.737	10.888	24.94	18.00
25.5	70.92	217.77	303.00	3,120.16	9.79	14.328	10.297	20.86	15.00
20.4	56.95	180.92	287.21	2,733.32	9.80	15.108	9.517	16.75	12.00
17.85	49.98	161.68	279.18	2,521.24	9.77	15.594	9.031	14.70	10.51
24 x 8 x 30.6	79.69	222.78	308.94	3,187.48	9.52	14.307	10.318	23.44	18.00
25.5	66.67	192.44	294.18	2,864.80	9.56	14.887	9.738	19.61	15.00
20.4	53.55	160.04	279.02	2,504.50	9.55	15.649	8.976	15.75	12.00
17.85	47.00	143.10	271.30	2,307.04	9.50	16.121	8.504	13.82	10.51

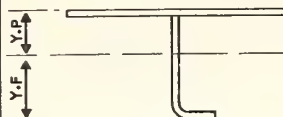


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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25.5 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 6 x 30.6	74.59	193.14	297.35	2,883.26	9.26	14.928	9.697	21.94	18.00
25.5	62.42	167.06	283.41	2,588.21	9.28	15.493	9.132	18.36	15.00
20.4	50.15	139.14	269.04	2,258.39	9.24	16.231	8.394	14.75	12.00
17.85	44.02	124.51	261.70	2,077.63	9.18	16.686	7.939	12.95	10.51
21 x 20 x 30.6	102.64	295.10	340.74	3,419.82	9.03	10.036	11.589	30.19	15.75
25.5	85.80	281.76	293.54	3,108.92	9.17	10.591	11.034	25.23	13.12
20.4	68.85	243.26	268.10	2,758.02	9.29	11.338	10.287	20.25	10.50
17.85	60.40	217.05	261.16	2,563.34	9.32	11.810	9.815	17.77	9.20
21 x 18 x 30.6	97.54	291.59	315.01	3,274.54	9.00	10.395	11.230	28.69	15.75
25.5	81.55	271.41	278.45	2,972.19	9.12	10.951	10.674	23.98	13.12
20.4	65.45	224.96	264.98	2,631.09	9.22	11.696	9.929	19.25	10.50
17.85	57.43	200.74	258.14	2,442.03	9.24	12.165	9.460	16.89	9.20
21 x 16 x 30.6	92.44	287.55	289.21	3,118.06	8.95	10.781	10.844	27.19	15.75
25.5	77.30	249.23	274.64	2,825.54	9.06	11.337	10.288	22.73	13.12
20.4	62.05	206.64	261.40	2,495.70	9.13	12.078	9.547	18.25	10.50
17.85	54.45	184.42	254.66	2,313.06	9.13	12.542	9.083	16.01	9.20
21 x 14 x 30.6	87.34	263.34	282.85	2,949.03	8.88	11.199	10.426	25.69	15.75
25.5	73.05	227.01	270.22	2,667.86	8.96	11.752	9.873	21.48	13.12
20.4	58.65	188.29	257.24	2,350.95	9.01	12.486	9.139	17.25	10.50
17.85	51.47	168.08	250.63	2,175.67	9.00	12.944	8.681	15.14	9.20
21 x 12 x 30.6	82.24	237.40	277.31	2,765.89	8.78	11.651	9.974	24.19	15.75
25.5	68.80	204.75	265.01	2,497.84	8.84	12.200	9.425	20.23	13.12
20.4	55.25	169.91	252.35	2,195.86	8.86	12.923	8.702	16.25	10.50
17.85	48.49	151.72	245.89	2,029.03	8.84	13.373	8.252	14.26	9.20
21 x 10 x 30.6	77.14	211.39	270.69	2,566.79	8.64	12.143	9.482	22.69	15.75
25.5	64.55	182.44	258.79	2,313.98	8.68	12.684	8.941	18.98	13.12
20.4	51.85	151.51	246.52	2,029.27	8.67	13.393	8.232	15.25	10.50
17.85	45.51	135.35	240.24	1,872.14	8.64	13.832	7.793	13.39	9.20
21 x 8 x 30.6	72.04	185.31	262.63	2,349.54	8.45	12.679	8.946	21.19	15.75
25.5	60.30	160.09	251.24	2,114.52	8.47	13.209	8.416	17.73	13.12
20.4	48.45	133.09	239.45	1,849.84	8.44	13.900	7.725	14.25	10.50
17.85	42.53	118.95	233.40	1,703.92	8.39	14.324	7.301	12.51	9.20
21 x 6 x 30.6	66.94	159.16	252.62	2,111.54	8.20	13.267	8.358	19.69	15.75
25.5	56.05	137.69	241.86	1,897.38	8.20	13.780	7.845	16.48	13.12
20.4	45.05	114.64	230.69	1,656.05	8.14	14.446	7.179	13.25	10.50
17.85	39.56	102.54	224.93	1,523.08	8.08	14.854	6.771	11.63	9.20
18 x 18 x 30.6	89.89	241.85	262.18	2,343.07	7.84	8.937	9.688	26.44	13.50
25.5	75.17	226.03	232.20	2,133.27	7.94	9.438	9.187	22.11	11.25
20.4	60.35	187.36	222.24	1,893.41	8.02	10.106	8.519	17.75	9.00
15.3	45.42	145.87	211.80	1,608.84	8.01	11.029	7.596	13.36	6.75
18 x 16 x 30.6	84.79	238.66	239.96	2,228.54	7.80	9.287	9.338	24.94	13.50
25.5	70.92	206.90	229.17	2,025.14	7.88	9.788	8.837	20.86	11.25
20.4	56.95	171.54	219.35	1,792.85	7.94	10.452	8.173	16.75	9.00
15.3	42.87	133.58	209.04	1,517.96	7.90	11.363	7.262	12.61	6.75
18 x 14 x 30.6	79.69	217.66	234.91	2,104.25	7.74	9.667	8.958	23.44	13.50
25.5	66.67	187.72	225.61	1,908.39	7.80	10.166	8.459	19.61	11.25
20.4	53.55	155.68	215.97	1,684.97	7.83	10.823	7.802	15.75	9.00
15.3	40.32	121.28	205.80	1,421.29	7.76	11.719	6.906	11.86	6.75
18 x 12 x 30.6	74.59	195.29	230.46	1,968.88	7.65	10.082	8.543	21.94	13.50
25.5	62.42	168.49	221.38	1,781.94	7.70	10.576	8.049	18.36	11.25
20.4	50.15	139.80	211.95	1,568.93	7.70	11.223	7.402	14.75	9.00
15.3	37.77	108.97	201.97	1,318.28	7.60	12.098	6.527	11.11	6.75



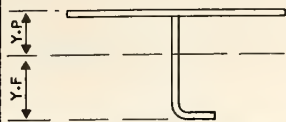
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

25.5 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 10 x 30.6	69.49	172.85	225.06	1,820.89	7.53	10.534	8.091	20.44	13.50
25.5	58.17	149.22	216.26	1,644.52	7.55	11.021	7.604	17.11	11.25
20.4	46.75	123.89	207.10	1,443.79	7.53	11.653	6.972	13.75	9.00
15.3	35.22	96.64	197.34	1,208.27	7.40	12.502	6.123	10.36	6.75
18 x 8 x 30.6	64.39	150.33	218.40	1,658.42	7.36	11.032	7.593	18.94	13.50
25.5	53.92	129.90	209.95	1,494.65	7.36	11.506	7.119	15.86	11.25
20.4	43.35	107.96	201.12	1,308.41	7.31	12.119	6.506	12.75	9.00
15.3	32.67	84.30	191.67	1,090.52	7.15	12.935	5.690	9.61	6.75
18 x 6 x 30.6	59.29	127.74	209.97	1,479.24	7.12	11.580	7.045	17.44	13.50
25.5	49.67	110.53	201.98	1,330.56	7.11	12.038	6.587	14.61	11.25
20.4	39.95	92.00	193.59	1,161.50	7.04	12.625	6.000	11.75	9.00
15.3	30.12	71.95	184.53	964.18	6.85	13.400	5.225	8.86	6.75
16 x 12 x 30.6	69.49	168.56	200.41	1,522.10	6.88	9.030	7.595	20.44	12.00
25.5	58.17	145.49	193.23	1,379.82	6.92	9.484	7.141	17.11	10.00
20.4	46.75	120.71	185.70	1,216.26	6.91	10.076	6.549	13.75	8.00
15.3	35.22	94.05	177.62	1,022.28	6.80	10.870	5.755	10.36	6.00
16 x 10 x 30.6	64.39	148.53	195.80	1,404.17	6.77	9.454	7.171	18.94	12.00
25.5	53.92	128.27	188.82	1,269.86	6.79	9.900	6.725	15.86	10.00
20.4	43.35	106.49	181.48	1,115.76	6.75	10.477	6.148	12.75	8.00
15.3	32.67	83.03	173.56	933.68	6.62	11.245	5.380	9.61	6.00
16 x 8 x 30.6	59.29	128.43	190.04	1,274.11	6.61	9.921	6.704	17.44	12.00
25.5	49.67	111.01	183.33	1,149.47	6.61	10.355	6.270	14.61	10.00
20.4	39.95	92.25	176.24	1,006.68	6.55	10.913	5.712	11.75	8.00
15.3	30.12	72.00	168.51	838.63	6.38	11.648	4.977	8.86	6.00
15 x 12 x 30.6	66.94	155.60	185.74	1,322.95	6.49	8.502	7.123	19.69	11.25
25.5	56.05	134.34	179.43	1,200.34	6.52	8.935	6.690	16.48	9.37
20.4	45.05	111.47	172.78	1,058.72	6.51	9.498	6.127	13.25	7.50
15.3	33.95	86.83	165.58	890.03	6.40	10.250	5.375	9.98	5.62
15 x 11 x 30.6	64.39	146.20	183.74	1,272.16	6.44	8.701	6.924	18.94	11.25
25.5	53.92	126.25	177.51	1,152.79	6.47	9.131	6.494	15.86	9.37
20.4	43.35	104.79	170.93	1,015.07	6.44	9.687	5.938	12.75	7.50
15.3	32.67	81.66	163.78	851.39	6.32	10.427	5.198	9.61	5.62
15 x 10 x 30.6	61.84	136.79	181.51	1,218.83	6.38	8.910	6.715	18.19	11.25
25.5	51.80	118.16	175.37	1,103.05	6.40	9.335	6.290	15.23	9.37
20.4	41.65	98.11	168.87	969.61	6.36	9.883	5.742	12.25	7.50
15.3	31.40	76.47	161.79	811.37	6.22	10.610	5.015	9.23	5.62
15 x 9 x 30.6	59.29	127.36	179.01	1,162.75	6.32	9.130	6.495	17.44	11.25
25.5	49.67	110.05	172.98	1,050.94	6.32	9.549	6.076	14.61	9.37
20.4	39.95	91.41	166.57	922.21	6.27	10.089	5.536	11.75	7.50
15.3	30.12	71.29	159.56	769.89	6.12	10.800	4.825	8.86	5.62
15 x 8 x 30.6	56.74	117.91	176.19	1,103.71	6.23	9.361	6.264	16.69	11.25
25.5	47.55	101.93	170.28	996.29	6.23	9.774	5.851	13.98	9.37
20.4	38.25	84.71	163.98	872.75	6.16	10.303	5.322	11.25	7.50
15.3	28.85	66.10	157.05	726.86	6.00	10.997	4.628	8.48	5.62



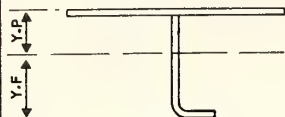
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	603.07	909.74	11,129.36	12.33	12.233	18.455	59.00	30.00
35.7	175.90	575.21	817.23	10,360.07	12.54	12.677	18.011	51.73	26.25
30.6	151.09	547.04	720.44	9,542.13	12.76	13.245	17.443	44.44	22.50
25.5	126.17	518.54	618.80	8,657.83	12.99	13.991	16.697	37.11	18.75
20.4	101.15	489.61	511.58	7,677.44	13.22	15.007	15.681	29.75	15.00
17.85	88.70	456.03	475.06	7,140.41	13.31	15.658	15.030	26.09	13.14
30 x 27 x 40.8	190.40	595.91	840.09	10,698.43	12.35	12.735	17.953	56.00	30.00
35.7	166.97	568.48	754.70	9,950.36	12.54	13.184	17.504	49.11	26.25
30.6	143.44	540.74	665.37	9,154.48	12.74	13.758	16.930	42.19	22.50
25.5	119.80	512.65	571.57	8,293.63	12.95	14.510	16.178	35.23	18.75
20.4	96.05	472.62	484.14	7,339.20	13.15	15.529	15.159	28.25	15.00
17.85	84.23	421.35	469.79	6,816.64	13.23	16.178	14.510	24.77	13.14
30 x 24 x 40.8	180.20	587.64	770.19	10,229.05	12.34	13.281	17.407	53.00	30.00
35.7	158.05	560.71	692.00	9,505.21	12.52	13.736	16.952	46.48	26.25
30.6	135.79	533.47	610.19	8,734.61	12.70	14.315	16.373	39.94	22.50
25.5	113.42	505.87	524.27	7,900.72	12.89	15.070	15.618	33.36	18.75
20.4	90.95	433.61	477.84	6,976.18	13.05	16.088	14.600	26.75	15.00
17.85	79.76	386.63	463.72	6,470.27	13.11	16.735	13.953	23.46	13.14
30 x 21 x 40.8	170.00	577.99	700.07	9,715.83	12.30	13.878	16.810	50.00	30.00
35.7	149.12	551.64	629.12	9,019.83	12.46	14.337	16.351	43.86	26.25
30.6	128.14	524.98	554.88	8,278.34	12.63	14.919	15.769	37.69	22.50
25.5	107.05	476.89	497.96	7,475.56	12.79	15.676	15.012	31.48	18.75
20.4	85.85	394.56	470.49	6,585.55	12.92	16.691	13.997	25.25	15.00
17.85	75.30	351.88	456.64	6,098.86	12.95	17.332	13.356	22.15	13.14
30 x 18 x 40.8	159.80	566.57	629.71	9,152.31	12.23	14.534	16.154	47.00	30.00
35.7	140.20	540.92	566.07	8,488.50	12.37	14.995	15.693	41.23	26.25
30.6	120.49	499.45	514.95	7,780.72	12.52	15.578	15.110	35.44	22.50
25.5	100.67	429.43	488.62	7,014.01	12.65	16.333	14.355	29.61	18.75
20.4	80.75	355.47	461.82	6,164.05	12.74	17.341	13.347	23.75	15.00
17.85	70.83	317.10	448.29	5,699.59	12.76	17.974	12.714	20.83	13.14
30 x 15 x 40.8	149.60	552.85	559.11	8,530.73	12.11	15.258	15.430	44.00	30.00
35.7	131.27	502.85	528.05	7,904.36	12.23	15.719	14.969	38.61	26.25
30.6	112.84	443.91	502.92	7,235.84	12.36	16.300	14.388	33.19	22.50
25.5	94.30	381.90	477.41	6,511.19	12.46	17.049	13.639	27.73	18.75
20.4	75.65	316.33	451.42	5,707.85	12.51	18.044	12.644	22.25	15.00
17.85	66.36	282.29	438.29	5,269.20	12.50	18.666	12.022	19.52	13.14
30 x 12 x 40.8	139.40	488.28	536.06	7,841.60	11.92	16.060	14.628	41.00	30.00
35.7	122.35	439.46	512.30	7,259.12	12.03	16.518	14.170	35.98	26.25
30.6	105.19	388.24	488.21	6,636.65	12.13	17.094	13.594	30.94	22.50
25.5	87.92	334.29	463.73	5,961.31	12.20	17.833	12.855	25.86	18.75
20.4	70.55	277.15	438.75	5,212.50	12.21	18.808	11.880	20.75	15.00
17.85	61.89	247.45	426.10	4,803.91	12.18	19.414	11.274	18.20	13.14
30 x 9 x 40.8	129.20	417.21	515.02	7,073.30	11.64	16.954	13.734	38.00	30.00
35.7	113.42	375.89	492.60	6,542.68	11.73	17.406	13.282	33.36	26.25
30.6	97.54	332.45	469.82	5,974.61	11.80	17.971	12.717	28.69	22.50
25.5	81.55	286.60	446.65	5,357.43	11.85	18.693	11.995	23.98	18.75
20.4	65.45	237.92	422.94	4,672.73	11.82	19.640	11.048	19.25	15.00
17.85	57.43	212.57	410.91	4,299.29	11.76	20.225	10.463	16.89	13.14
30 x 6 x 40.8	119.00	345.89	487.90	6,211.33	11.24	17.957	12.731	35.00	30.00
35.7	104.50	312.14	467.22	5,742.54	11.30	18.397	12.291	30.73	26.25
30.6	89.89	276.54	446.18	5,239.26	11.35	18.946	11.742	26.44	22.50
25.5	75.17	238.83	424.71	4,691.18	11.37	19.642	11.046	22.11	18.75
20.4	60.35	198.65	402.68	4,082.27	11.30	20.550	10.138	17.75	15.00
17.85	52.96	177.66	391.46	3,750.13	11.22	21.108	9.580	15.58	13.14
27 x 27 x 40.8	180.20	519.19	742.10	8,457.93	11.22	11.397	16.291	53.00	27.00
35.7	158.05	496.95	667.14	7,885.58	11.40	11.820	15.868	46.48	23.62



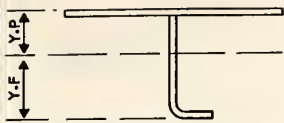
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	474.43	588.45	7,272.60	11.59	12.359	15.329	39.94	20.25
25.5	113.42	451.59	505.59	6,604.49	11.78	13.063	14.625	33.36	16.87
20.4	90.95	417.98	428.33	5,857.28	11.96	14.013	13.675	26.75	13.50
17.85	79.76	372.53	416.60	5,445.32	12.02	14.617	13.071	23.46	11.83
27 x 24 x 40.8	170.00	512.29	679.02	8,084.78	11.22	11.906	15.782	50.00	27.00
35.7	149.12	490.44	610.47	7,529.94	11.39	12.335	15.353	43.86	23.62
30.6	128.14	468.31	538.52	6,935.35	11.56	12.879	14.809	37.69	20.25
25.5	107.05	445.84	462.75	6,287.09	11.73	13.586	14.102	31.48	16.87
20.4	85.85	382.64	422.95	5,562.30	11.87	14.537	13.151	25.25	13.50
17.85	75.30	341.07	411.39	5,163.05	11.92	15.138	12.550	22.15	11.83
27 x 21 x 40.8	159.80	504.20	615.70	7,675.07	11.20	12.466	15.222	47.00	27.00
35.7	140.20	482.80	553.62	7,140.63	11.35	12.898	14.790	41.23	23.62
30.6	120.49	461.12	488.46	6,567.54	11.50	13.445	14.243	35.44	20.25
25.5	100.67	419.84	439.09	5,942.53	11.65	14.154	13.534	29.61	16.87
20.4	80.75	347.25	416.64	5,244.00	11.76	15.101	12.587	23.75	13.50
17.85	70.83	309.58	405.28	4,859.61	11.78	15.697	11.991	20.83	11.83
27 x 18 x 40.8	149.60	494.55	552.13	7,223.16	11.14	13.082	14.606	44.00	27.00
35.7	131.27	473.70	496.59	6,712.63	11.27	13.517	14.171	38.61	23.62
30.6	112.84	438.28	452.56	6,164.81	11.41	14.066	13.622	33.19	20.25
25.5	94.30	376.84	431.07	5,567.16	11.52	14.773	12.915	27.73	16.87
20.4	75.65	311.82	409.13	4,899.50	11.59	15.713	11.975	22.25	13.50
17.85	66.36	278.06	398.02	4,532.52	11.59	16.300	11.388	19.52	11.83
27 x 15 x 40.8	139.40	482.85	488.31	6,722.14	11.04	13.766	13.922	41.00	27.00
35.7	122.35	439.38	462.68	6,239.87	11.15	14.202	13.486	35.98	23.62
30.6	105.19	387.97	442.20	5,721.93	11.26	14.748	12.940	30.94	20.25
25.5	87.92	333.76	421.37	5,156.66	11.35	15.450	12.238	25.86	16.87
20.4	70.55	276.34	400.07	4,525.44	11.38	16.376	11.312	20.75	13.50
17.85	61.89	246.51	389.26	4,178.91	11.36	16.953	10.735	18.20	11.83
27 x 12 x 40.8	129.20	424.23	468.38	6,163.57	10.87	14.529	13.159	38.00	27.00
35.7	113.42	381.98	449.05	5,714.94	10.96	14.961	12.727	33.36	23.62
30.6	97.54	337.53	429.41	5,232.60	11.05	15.503	12.185	28.69	20.25
25.5	81.55	290.60	409.40	4,705.85	11.10	16.193	11.495	23.98	16.87
20.4	65.45	240.82	388.90	4,117.83	11.10	17.099	10.589	19.25	13.50
17.85	57.43	214.92	378.47	3,795.40	11.05	17.660	10.028	16.89	11.83
27 x 9 x 40.8	119.00	359.91	450.01	5,536.91	10.61	15.384	12.304	35.00	27.00
35.7	104.50	324.40	431.78	5,128.70	10.68	15.810	11.878	30.73	23.62
30.6	89.89	286.97	413.21	4,689.09	10.74	16.340	11.348	26.44	20.25
25.5	75.17	247.36	394.26	4,208.48	10.77	17.014	10.674	22.11	16.87
20.4	60.35	205.24	374.79	3,671.95	10.72	17.891	9.797	17.75	13.50
17.85	52.96	183.30	364.86	3,378.04	10.65	18.429	9.259	15.58	11.83
27 x 6 x 40.8	108.80	295.33	425.93	4,828.89	10.22	16.351	11.337	32.00	27.00
35.7	95.57	266.63	409.15	4,469.74	10.28	16.764	10.924	28.11	23.62
30.6	82.24	236.28	392.03	4,081.88	10.31	17.276	10.412	24.19	20.25
25.5	68.80	204.04	374.50	3,656.95	10.31	17.923	9.765	20.23	16.87
20.4	55.25	169.63	356.41	3,182.14	10.22	18.760	8.928	16.25	13.50
17.85	48.49	151.64	347.14	2,922.16	10.13	19.270	8.418	14.26	11.83
24 x 24 x 40.8	159.80	440.27	590.59	6,227.19	10.09	10.544	14.144	47.00	24.00
35.7	140.20	423.03	531.37	5,814.68	10.24	10.943	13.745	41.23	21.00
30.6	120.49	405.53	468.99	5,369.12	10.40	11.448	13.240	35.44	18.00
25.5	100.67	387.72	403.09	4,879.02	10.55	12.104	12.584	29.61	15.00
20.4	80.75	333.24	369.50	4,325.72	10.68	12.981	11.707	23.75	12.00
17.85	70.83	296.95	360.25	4,018.65	10.71	13.533	11.155	20.83	10.51
24 x 22 x 40.8	153.00	435.97	552.99	6,018.44	10.08	10.883	13.805	45.00	24.00
35.7	134.25	418.96	497.56	5,615.14	10.23	11.285	13.403	39.48	21.00
30.6	115.39	401.67	439.18	5,179.39	10.37	11.793	12.895	33.94	18.00
25.5	96.42	377.51	384.07	4,700.07	10.51	12.450	12.238	28.36	15.00



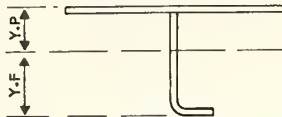
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 22 x 20.4	77.35	312.13	366.05	4,159.23	10.61	13.325	11.363	22.75	12.00
17.85	67.85	278.16	356.90	3,859.37	10.63	13.874	10.814	19.96	10.51
24 x 20 x 40.8	146.20	431.13	515.28	5,795.10	10.07	11.246	13.442	43.00	24.00
35.7	128.30	414.37	463.67	5,402.16	10.20	11.651	13.037	37.73	21.00
30.6	110.29	397.33	409.31	4,977.46	10.33	12.161	12.527	32.44	18.00
25.5	92.17	351.88	379.96	4,510.30	10.45	12.818	11.870	27.11	15.00
20.4	73.95	290.99	362.18	3,983.49	10.53	13.689	10.999	21.75	12.00
17.85	64.87	259.36	353.13	3,691.71	10.53	14.234	10.454	19.08	10.51
24 x 18 x 40.8	139.40	425.64	477.46	5,555.59	10.03	11.636	13.052	41.00	24.00
35.7	122.35	409.16	429.70	5,174.34	10.15	12.042	12.646	35.98	21.00
30.6	105.19	379.38	392.40	4,762.12	10.27	12.552	12.136	30.94	18.00
25.5	87.92	326.22	375.32	4,308.69	10.37	13.208	11.480	25.86	15.00
20.4	70.55	269.84	357.79	3,797.69	10.42	14.074	10.614	20.75	12.00
17.85	61.89	240.54	348.87	3,514.98	10.42	14.613	10.075	18.20	10.51
24 x 16 x 40.8	132.60	419.37	439.51	5,298.09	9.98	12.054	12.634	39.00	24.00
35.7	116.40	395.63	403.21	4,930.05	10.09	12.461	12.227	34.23	21.00
30.6	100.09	349.40	386.78	4,531.97	10.19	12.971	11.717	29.44	18.00
25.5	83.67	300.52	370.01	4,094.09	10.27	13.623	11.065	24.61	15.00
20.4	67.15	248.67	352.79	3,600.94	10.30	14.481	10.207	19.75	12.00
17.85	58.92	221.71	344.01	3,328.44	10.27	15.013	9.675	17.33	10.51
24 x 14 x 40.8	125.80	401.45	412.12	5,020.48	9.90	12.506	12.182	37.00	24.00
35.7	110.45	361.49	396.35	4,667.47	10.00	12.912	11.776	32.48	21.00
30.6	94.99	319.35	380.29	4,285.45	10.08	13.419	11.269	27.94	18.00
25.5	79.42	274.79	363.89	3,865.21	10.14	14.066	10.622	23.36	15.00
20.4	63.75	227.47	347.03	3,392.26	10.15	14.913	9.775	18.75	12.00
17.85	55.94	202.86	338.42	3,131.23	10.11	15.435	9.253	16.45	10.51
24 x 12 x 40.8	119.00	363.27	403.65	4,720.32	9.80	12.994	11.694	35.00	24.00
35.7	104.50	327.25	388.34	4,384.43	9.88	13.398	11.290	30.73	21.00
30.6	89.89	289.25	372.73	4,020.73	9.95	13.901	10.787	26.44	18.00
25.5	75.17	249.01	356.77	3,620.57	9.99	14.540	10.148	22.11	15.00
20.4	60.35	206.25	340.32	3,170.51	9.96	15.372	9.316	17.75	12.00
17.85	52.96	183.99	331.91	2,922.42	9.91	15.883	8.805	15.58	10.51
24 x 10 x 40.8	112.20	324.97	393.63	4,394.73	9.65	13.523	11.165	33.00	24.00
35.7	98.55	292.93	378.86	4,078.47	9.72	13.923	10.765	28.98	21.00
30.6	84.79	259.08	363.79	3,735.72	9.77	14.419	10.269	24.94	18.00
25.5	70.92	223.20	348.35	3,358.50	9.79	15.047	9.641	20.86	15.00
20.4	56.95	185.02	332.42	2,934.43	9.74	15.860	8.828	16.75	12.00
17.85	49.98	165.11	324.24	2,700.95	9.67	16.358	8.330	14.70	10.51
24 x 8 x 40.8	105.40	286.56	381.58	4,040.34	9.45	14.100	10.588	31.00	24.00
35.7	92.60	258.53	367.48	3,746.67	9.51	14.492	10.196	27.23	21.00
30.6	79.69	228.86	353.07	3,428.01	9.54	14.979	9.709	23.44	18.00
25.5	66.67	197.35	338.28	3,077.04	9.54	15.592	9.096	19.61	15.00
20.4	53.55	163.76	322.96	2,682.59	9.46	16.382	8.306	15.75	12.00
17.85	47.00	146.22	315.08	2,465.63	9.38	16.862	7.826	13.82	10.51
24 x 6 x 40.8	98.60	248.02	366.83	3,653.15	9.20	14.729	9.959	29.00	24.00
35.7	86.65	224.03	353.56	3,385.61	9.24	15.112	9.576	25.48	21.00
30.6	74.59	198.57	339.97	3,094.75	9.25	15.585	9.103	21.94	18.00
25.5	62.42	171.46	325.98	2,773.98	9.23	16.178	8.510	18.36	15.00
20.4	50.15	142.47	311.43	2,413.35	9.13	16.939	7.749	14.75	12.00
17.85	44.02	127.31	303.92	2,215.13	9.03	17.400	7.288	12.95	10.51
21 x 20 x 40.8	136.00	364.32	438.86	4,317.31	8.93	9.838	11.850	40.00	21.00
35.7	119.37	351.54	395.24	4,035.17	9.05	10.209	11.479	35.11	18.37
30.6	102.64	338.51	349.11	3,727.36	9.16	10.677	11.011	30.19	15.75
25.5	85.80	300.20	325.17	3,385.34	9.27	11.277	10.411	25.23	13.12
20.4	68.85	248.20	311.42	2,995.56	9.33	12.069	9.619	20.25	10.50
17.85	60.40	221.15	304.39	2,778.01	9.32	12.561	9.127	17.77	9.20



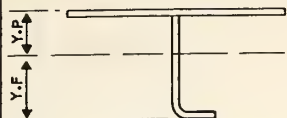
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	359.89	405.68	4,136.08	8.90	10.195	11.493	38.00	21.00
35.7	113.42	347.31	365.39	3,861.81	9.01	10.569	11.119	33.36	18.37
30.6	97.54	322.78	334.48	3,562.53	9.11	11.037	10.651	28.69	15.75
25.5	81.55	277.60	321.34	3,230.10	9.20	11.636	10.052	23.98	13.12
20.4	65.45	229.56	307.77	2,851.67	9.23	12.422	9.266	19.25	10.50
17.85	57.43	204.57	300.82	2,640.78	9.22	12.909	8.779	16.89	9.20
21 x 16 x 40.8	122.40	354.79	372.38	3,940.42	8.86	10.582	11.106	36.00	21.00
35.7	107.47	335.45	342.45	3,675.20	8.96	10.956	10.732	31.61	18.37
30.6	92.44	296.38	329.85	3,385.76	9.04	11.424	10.264	27.19	15.75
25.5	77.30	254.96	316.93	3,064.36	9.11	12.019	9.669	22.73	13.12
20.4	62.05	210.89	303.57	2,698.92	9.12	12.798	8.890	18.25	10.50
17.85	54.45	187.96	296.71	2,495.61	9.09	13.277	8.411	16.01	9.20
21 x 14 x 40.8	115.60	338.96	348.85	3,728.54	8.80	11.000	10.688	34.00	21.00
35.7	101.52	305.42	336.79	3,473.78	8.88	11.374	10.314	29.86	18.37
30.6	87.34	269.93	324.47	3,195.70	8.95	11.839	9.849	25.69	15.75
25.5	73.05	232.27	311.82	2,887.01	8.99	12.429	9.259	21.48	13.12
20.4	58.65	192.21	298.70	2,536.45	8.98	13.196	8.492	17.25	10.50
17.85	51.47	171.34	291.96	2,341.76	8.93	13.667	8.021	15.14	9.20
21 x 12 x 40.8	108.80	305.41	341.85	3,498.33	8.70	11.455	10.233	32.00	21.00
35.7	95.57	275.30	330.13	3,255.71	8.77	11.826	9.862	28.11	18.37
30.6	82.24	243.41	318.14	2,990.79	8.83	12.287	9.401	24.19	15.75
25.5	68.80	209.55	305.80	2,696.79	8.85	12.869	8.819	20.23	13.12
20.4	55.25	173.50	292.99	2,363.32	8.81	13.622	8.066	16.25	10.50
17.85	48.49	154.71	286.37	2,178.44	8.75	14.081	7.607	14.26	9.20
21 x 10 x 40.8	102.00	271.73	333.47	3,247.29	8.57	11.950	9.738	30.00	21.00
35.7	89.62	245.08	322.16	3,018.83	8.63	12.318	9.370	26.36	18.37
30.6	77.14	216.83	310.57	2,769.22	8.66	12.771	8.917	22.69	15.75
25.5	64.55	186.79	298.62	2,492.23	8.67	13.342	8.346	18.98	13.12
20.4	51.85	154.76	286.17	2,178.42	8.60	14.076	7.612	15.25	10.50
17.85	45.51	138.06	279.73	2,004.76	8.52	14.521	7.167	13.39	9.20
21 x 8 x 40.8	95.20	237.93	323.27	2,972.49	8.39	12.493	9.195	28.00	21.00
35.7	83.67	214.78	312.47	2,760.60	8.43	12.853	8.835	24.61	18.37
30.6	72.04	190.19	301.37	2,528.87	8.45	13.297	8.391	21.19	15.75
25.5	60.30	163.99	289.91	2,271.67	8.43	13.852	7.836	17.73	13.12
20.4	48.45	136.01	277.92	1,980.53	8.34	14.562	7.126	14.25	10.50
17.85	42.53	121.39	271.69	1,819.68	8.25	14.990	6.698	12.51	9.20
21 x 6 x 40.8	88.40	204.01	310.56	2,670.35	8.15	13.090	8.598	26.00	21.00
35.7	77.72	184.38	300.42	2,477.98	8.18	13.440	8.248	22.86	18.37
30.6	66.94	163.48	289.96	2,267.25	8.18	13.869	7.819	19.69	15.75
25.5	56.05	141.15	279.12	2,033.14	8.14	14.404	7.284	16.48	13.12
20.4	45.05	117.23	267.71	1,768.22	8.03	15.083	6.605	13.25	10.50
17.85	39.56	104.71	261.76	1,622.05	7.92	15.491	6.197	11.63	9.20
18 x 18 x 40.8	119.00	297.31	336.79	2,951.04	7.74	8.762	9.926	35.00	18.00
35.7	104.50	288.17	303.68	2,763.21	7.84	9.099	9.589	30.73	15.75
30.6	89.89	268.47	278.79	2,555.91	7.93	9.520	9.168	26.44	13.50
25.5	75.17	230.98	269.12	2,322.90	8.00	10.057	8.631	22.11	11.25
20.4	60.35	191.00	259.04	2,054.50	8.02	10.757	7.931	17.75	9.00
15.3	45.42	148.25	248.28	1,734.72	7.93	11.701	6.987	13.36	6.75
18 x 16 x 40.8	112.20	293.30	308.22	2,808.56	7.71	9.112	9.576	33.00	18.00
35.7	98.55	277.93	284.32	2,626.49	7.80	9.450	9.238	28.98	15.75
30.6	84.79	245.73	275.10	2,425.57	7.87	9.871	8.817	24.94	13.50
25.5	70.92	211.45	265.57	2,199.94	7.92	10.404	8.284	20.86	11.25
20.4	56.95	174.88	255.61	1,940.52	7.92	11.096	7.592	16.75	9.00
15.3	42.87	135.78	244.94	1,632.51	7.80	12.023	6.665	12.61	6.75
18 x 14 x 40.8	105.40	279.51	288.59	2,653.49	7.66	9.493	9.195	31.00	18.00
35.7	92.60	252.09	279.80	2,478.22	7.73	9.831	8.857	27.23	15.75



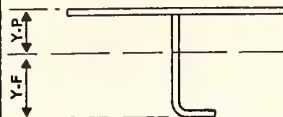
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 30.6	79.69	222.93	270.76	2,284.86	7.79	10.249	8.439	23.44	13.50
25.5	66.67	191.88	261.40	2,067.90	7.82	10.777	7.911	19.61	11.25
20.4	53.55	158.74	251.60	1,818.93	7.79	11.458	7.230	15.75	9.00
15.3	40.32	123.30	241.04	1,524.41	7.65	12.364	6.324	11.86	6.75
18 x 12 x 40.8	98.60	250.67	282.98	2,484.07	7.58	9.910	8.778	29.00	18.00
35.7	86.65	226.15	274.42	2,316.89	7.64	10.245	8.443	25.48	15.75
30.6	74.59	200.06	265.60	2,132.46	7.68	10.659	8.029	21.94	13.50
25.5	62.42	172.26	256.45	1,925.71	7.69	11.179	7.509	18.36	11.25
20.4	50.15	142.58	246.84	1,688.94	7.64	11.846	6.842	14.75	9.00
15.3	37.77	110.80	236.43	1,409.91	7.46	12.725	5.963	11.11	6.75
18 x 10 x 40.8	91.80	221.70	276.18	2,298.22	7.47	10.367	8.321	27.00	18.00
35.7	80.70	200.11	267.90	2,140.68	7.51	10.698	7.990	23.73	15.75
30.6	69.49	177.12	259.36	1,966.88	7.54	11.104	7.584	20.44	13.50
25.5	58.17	152.61	250.48	1,772.18	7.52	11.613	7.075	17.11	11.25
20.4	46.75	126.39	241.10	1,549.65	7.45	12.261	6.427	13.75	9.00
15.3	35.22	98.30	230.88	1,288.41	7.24	13.108	5.580	10.36	6.75
18 x 8 x 40.8	85.00	192.59	267.77	2,093.42	7.31	10.870	7.818	25.00	18.00
35.7	74.75	173.98	259.86	1,947.44	7.34	11.194	7.494	21.98	15.75
30.6	64.39	154.12	251.67	1,786.31	7.34	11.590	7.098	18.94	13.50
25.5	53.92	132.91	243.12	1,605.88	7.31	12.083	6.605	15.86	11.25
20.4	43.35	110.18	234.05	1,400.02	7.21	12.706	5.982	12.75	9.00
15.3	32.67	85.78	224.08	1,159.27	6.98	13.515	5.173	9.61	6.75
18 x 6 x 40.8	78.20	163.34	257.09	1,866.62	7.08	11.427	7.261	23.00	18.00
35.7	68.80	147.74	249.67	1,734.57	7.10	11.740	6.948	20.23	15.75
30.6	59.29	131.05	241.94	1,588.62	7.09	12.122	6.566	17.44	13.50
25.5	49.67	113.17	233.84	1,425.15	7.03	12.593	6.095	14.61	11.25
20.4	39.95	93.95	225.18	1,238.87	6.91	13.186	5.502	11.75	9.00
15.3	30.12	73.25	215.55	1,021.72	6.66	13.948	4.740	8.86	6.75



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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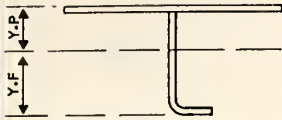
STEEL

30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	671.18	931.32	11,994.63	12.57	12.879	17.871	59.00	30.00
35.7	175.90	643.45	836.02	11,180.74	12.77	13.374	17.376	51.73	26.25
30.6	151.09	615.38	736.28	10,307.75	12.97	14.000	16.750	44.44	22.50
25.5	126.17	586.91	631.56	9,354.45	13.16	14.812	15.938	37.11	18.75
20.4	101.15	521.18	557.94	8,286.11	13.33	15.899	14.851	29.75	15.00
17.85	88.70	464.06	543.31	7,696.30	13.38	16.585	14.165	26.09	13.14
30 x 27 x 40.8	190.40	663.30	860.11	11,515.73	12.57	13.389	17.361	56.00	30.00
35.7	166.97	635.99	772.15	10,723.81	12.75	13.888	16.862	49.11	26.25
30.6	143.44	608.34	680.09	9,874.06	12.93	14.519	16.231	42.19	22.50
25.5	119.80	580.28	583.44	8,946.04	13.10	15.333	15.417	35.23	18.75
20.4	96.05	481.55	551.71	7,906.54	13.24	16.419	14.331	28.25	15.00
17.85	84.23	428.82	537.27	7,333.24	13.27	17.101	13.649	24.77	13.14
30 x 24 x 40.8	180.20	654.20	788.67	10,995.72	12.54	13.942	16.808	53.00	30.00
35.7	158.05	627.38	708.11	10,229.04	12.71	14.446	16.304	46.48	26.25
30.6	135.79	600.21	623.79	9,406.02	12.87	15.079	15.671	39.94	22.50
25.5	113.42	535.24	572.64	8,507.14	13.01	15.894	14.856	33.36	18.75
20.4	90.95	441.88	544.53	7,500.87	13.11	16.975	13.775	26.75	15.00
17.85	79.76	393.55	530.30	6,946.53	13.12	17.651	13.099	23.46	13.14
30 x 21 x 40.8	170.00	643.58	717.02	10,429.09	12.49	14.545	16.205	50.00	30.00
35.7	149.12	617.34	643.91	9,691.52	12.63	15.051	15.699	43.86	26.25
30.6	128.14	567.37	590.74	8,899.40	12.77	15.685	15.065	37.69	22.50
25.5	107.05	486.98	563.73	8,034.21	12.89	16.498	14.252	31.48	18.75
20.4	85.85	402.17	536.16	7,066.32	12.95	17.570	13.180	25.25	15.00
17.85	75.30	358.25	522.19	6,533.78	12.94	18.238	12.512	22.15	13.14
30 x 18 x 40.8	159.80	631.01	645.14	9,809.25	12.39	15.205	15.545	47.00	30.00
35.7	140.20	579.55	605.46	9,105.44	12.52	15.711	15.039	41.23	26.25
30.6	120.49	510.85	579.55	8,349.20	12.63	16.344	14.406	35.44	22.50
25.5	100.67	438.64	553.21	7,523.13	12.72	17.151	13.599	29.61	18.75
20.4	80.75	362.42	526.29	6,599.67	12.75	18.210	12.540	23.75	15.00
17.85	70.83	322.93	512.63	6,092.27	12.71	18.866	11.884	20.83	13.14
30 x 15 x 40.8	149.60	573.05	615.92	9,128.34	12.25	15.929	14.821	44.00	30.00
35.7	131.27	515.03	591.21	8,463.93	12.35	16.434	14.316	38.61	26.25
30.6	112.84	454.21	566.13	7,749.55	12.44	17.061	13.689	33.19	22.50
25.5	94.30	390.24	540.61	6,969.10	12.50	17.859	12.891	27.73	18.75
20.4	75.65	322.63	514.47	6,097.25	12.48	18.899	11.851	22.75	15.00
17.85	66.36	287.57	501.19	5,618.87	12.43	19.539	11.211	19.52	13.14
30 x 12 x 40.8	139.40	500.73	597.46	8,376.87	12.03	16.729	14.021	41.00	30.00
35.7	122.35	450.35	573.79	7,758.71	12.12	17.228	13.522	35.98	26.25
30.6	105.19	397.47	549.74	7,093.48	12.18	17.847	12.903	30.94	22.50
25.5	87.92	341.76	525.22	6,366.46	12.21	18.629	12.121	25.86	18.75
20.4	70.55	282.80	500.07	5,554.77	12.15	19.642	11.108	20.75	15.00
17.85	61.89	252.19	487.26	5,110.01	12.07	20.263	10.487	18.20	13.14
30 x 9 x 40.8	129.20	428.19	574.35	7,543.26	11.72	17.616	13.134	38.00	30.00
35.7	113.42	385.51	552.01	6,979.82	11.79	18.106	12.644	33.36	26.25
30.6	97.54	340.61	529.27	6,372.62	11.83	18.709	12.041	28.69	22.50
25.5	81.55	293.21	506.03	5,708.51	11.82	19.469	11.281	23.98	18.75
20.4	65.45	242.93	482.13	4,967.24	11.73	20.447	10.303	19.25	15.00
17.85	57.43	216.78	469.91	4,561.55	11.62	21.043	9.707	16.89	13.14
30 x 6 x 40.8	119.00	355.43	544.58	6,613.26	11.29	18.606	12.144	35.00	30.00
35.7	104.50	320.50	523.98	6,115.05	11.33	19.080	11.670	30.73	26.25
30.6	89.89	283.64	502.96	5,576.88	11.35	19.662	11.088	26.44	22.50
25.5	75.17	244.59	481.42	4,987.28	11.31	20.390	10.360	22.11	18.75
20.4	60.35	203.02	459.15	4,328.81	11.18	21.322	9.428	17.75	15.00
17.85	52.96	181.33	447.72	3,968.67	11.06	21.886	8.864	15.58	13.14
27 x 27 x 40.8	180.20	580.17	759.74	9,128.66	11.43	12.015	15.735	53.00	27.00
35.7	158.05	558.04	682.40	8,519.04	11.60	12.484	15.266	46.48	23.62

PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

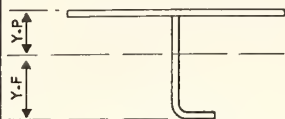
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STEEL

30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	535.59	601.23	7,860.39	11.76	13.074	14.676	39.94	20.25
25.5	113.42	512.76	515.80	7,135.57	11.92	13.834	13.916	33.36	16.87
20.4	90.95	425.58	489.43	6,316.98	12.03	14.843	12.907	26.75	13.50
17.85	79.76	378.86	477.59	5,862.68	12.06	15.474	12.276	23.46	11.83
27 x 24 x 40.8	170.00	572.53	695.24	8,712.75	11.41	12.532	15.218	50.00	27.00
35.7	149.12	550.78	624.51	8,121.48	11.56	13.005	14.745	43.86	23.62
30.6	128.14	528.71	550.28	7,482.47	11.71	13.598	14.152	37.69	20.25
25.5	107.05	472.16	506.24	6,779.41	11.84	14.358	13.392	31.48	16.87
20.4	85.85	389.65	483.25	5,986.14	11.92	15.363	12.387	25.25	13.50
17.85	75.30	346.92	471.57	5,546.56	11.92	15.988	11.762	22.15	11.83
27 x 21 x 40.8	159.80	563.56	630.50	8,257.79	11.37	13.097	14.653	47.00	27.00
35.7	140.20	542.26	566.45	7,688.01	11.50	13.572	14.178	41.23	23.62
30.6	120.49	499.22	520.63	7,072.07	11.63	14.166	13.584	35.44	20.25
25.5	100.67	428.45	498.59	6,394.51	11.73	14.925	12.825	29.61	16.87
20.4	80.75	353.68	476.01	5,630.86	11.77	15.921	11.829	23.75	13.50
17.85	70.83	314.94	464.52	5,208.41	11.75	16.538	11.212	20.83	11.83
27 x 18 x 40.8	149.60	552.88	565.54	7,758.02	11.29	13.718	14.032	44.00	27.00
35.7	131.27	508.22	532.12	7,213.54	11.40	14.194	13.556	38.61	23.62
30.6	112.84	448.04	511.02	6,624.77	11.50	14.786	12.964	33.19	20.25
25.5	94.30	384.66	489.50	5,977.27	11.58	15.539	12.211	27.73	16.87
20.4	75.65	317.67	467.42	5,248.35	11.58	16.522	11.228	22.25	13.50
17.85	66.36	282.94	456.16	4,845.84	11.54	17.127	10.623	19.52	11.83
27 x 15 x 40.8	139.40	500.34	539.93	7,206.46	11.16	14.403	13.347	41.00	27.00
35.7	122.35	449.82	519.84	6,691.97	11.25	14.877	12.873	35.98	23.62
30.6	105.19	396.74	499.39	6,135.39	11.33	15.464	12.286	30.94	20.25
25.5	87.92	340.80	478.52	5,523.42	11.37	16.207	11.543	25.86	16.87
20.4	70.55	281.61	457.04	4,835.34	11.34	17.170	10.580	20.75	13.50
17.85	61.89	250.90	446.06	4,456.10	11.27	17.760	9.990	18.20	11.83
27 x 12 x 40.8	129.20	434.91	523.93	6,594.62	10.96	15.163	12.587	38.00	27.00
35.7	113.42	391.26	504.67	6,115.90	11.03	15.631	12.119	33.36	23.62
30.6	97.54	345.33	485.05	5,597.69	11.08	16.209	11.541	28.69	20.25
25.5	81.55	296.87	464.97	5,027.92	11.09	16.937	10.813	23.98	16.87
20.4	65.45	245.51	444.26	4,388.04	11.02	17.873	9.877	19.25	13.50
17.85	57.43	218.84	433.65	4,036.04	10.93	18.443	9.307	16.89	11.83
27 x 9 x 40.8	119.00	369.25	503.63	5,912.04	10.68	16.011	11.739	35.00	27.00
35.7	104.50	332.52	485.45	5,476.33	10.73	16.469	11.281	30.73	23.62
30.6	89.89	293.81	466.89	5,004.14	10.75	17.032	10.718	26.44	20.25
25.5	75.17	252.86	447.85	4,484.76	10.73	17.736	10.014	22.11	16.87
20.4	60.35	209.38	428.14	3,901.98	10.62	18.636	9.114	17.75	13.50
17.85	52.96	186.75	418.00	3,581.96	10.51	19.181	8.569	15.58	11.83
27 x 6 x 40.8	108.80	303.34	477.04	5,145.70	10.26	16.963	10.787	32.00	27.00
35.7	95.57	273.61	460.32	4,762.14	10.29	17.405	10.345	28.11	23.62
30.6	82.24	242.16	443.19	4,345.54	10.29	17.945	9.805	24.19	20.25
25.5	68.80	208.78	425.54	3,886.72	10.23	18.616	9.134	20.23	16.87
20.4	55.25	173.19	407.18	3,371.90	10.09	19.469	8.281	16.25	13.50
17.85	48.49	154.63	397.67	3,089.56	9.96	19.981	7.769	14.26	11.83
24 x 24 x 40.8	159.80	494.11	604.61	6,729.53	10.26	11.130	13.620	47.00	24.00
35.7	140.20	476.95	543.42	6,286.76	10.40	11.569	13.181	41.23	21.00
30.6	120.49	459.50	478.99	5,804.42	10.53	12.118	12.632	35.44	18.00
25.5	100.67	411.01	441.67	5,269.16	10.65	12.820	11.930	29.61	15.00
20.4	80.75	339.09	423.32	4,659.83	10.71	13.742	11.008	23.75	12.00
17.85	70.83	301.80	413.95	4,319.97	10.70	14.314	10.436	20.83	10.51
24 x 22 x 40.8	153.00	489.31	566.15	6,496.04	10.25	11.474	13.276	45.00	24.00
35.7	134.25	472.37	508.88	6,063.07	10.37	11.915	12.835	39.48	21.00
30.6	115.39	448.58	455.13	5,591.40	10.49	12.465	12.285	33.94	18.00
25.5	96.42	384.96	437.50	5,068.17	10.59	13.166	11.584	28.36	15.00



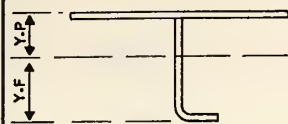
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30#

STEEL

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 22 x 20.4	77.35	317.63	419.34	4,473.17	10.62	14.083	10.667	22.75	12.00
17.85	67.85	282.73	410.05	4,141.78	10.60	14.649	10.101	19.96	10.51
24 x 20 x 40.8	146.20	483.91	527.59	6,246.98	10.21	11.841	12.909	43.00	24.00
35.7	128.30	467.21	474.26	5,825.06	10.33	12.282	12.468	37.73	21.00
30.6	110.29	418.12	450.21	5,365.42	10.43	12.832	11.918	32.44	18.00
25.5	92.17	358.87	432.81	4,855.76	10.51	13.531	11.219	27.11	15.00
20.4	73.95	296.16	414.86	4,276.85	10.52	14.441	10.309	21.75	12.00
17.85	64.87	263.65	405.67	3,954.91	10.49	15.001	9.749	19.08	10.51
24 x 18 x 40.8	139.40	477.79	488.92	5,980.70	10.17	12.232	12.518	41.00	24.00
35.7	122.35	439.57	461.37	5,571.29	10.27	12.675	12.075	35.98	21.00
30.6	105.19	387.60	444.64	5,125.27	10.35	13.223	11.527	30.94	18.00
25.5	87.92	332.74	427.50	4,630.93	10.41	13.917	10.833	25.86	15.00
20.4	70.55	274.67	409.80	4,070.09	10.40	14.818	9.932	20.75	12.00
17.85	61.89	244.55	400.72	3,758.71	10.35	15.370	9.380	18.20	10.51
24 x 16 x 40.8	132.60	450.14	470.79	5,695.38	10.10	12.652	12.098	39.00	24.00
35.7	116.40	404.79	454.70	5,300.15	10.18	13.094	11.656	34.23	21.00
30.6	100.09	357.02	438.28	4,869.56	10.25	13.639	11.111	29.44	18.00
25.5	83.67	306.58	421.44	4,392.55	10.29	14.327	10.423	24.61	15.00
20.4	67.15	253.16	404.03	3,852.05	10.26	15.216	9.534	19.75	12.00
17.85	58.92	225.44	395.07	3,552.45	10.19	15.758	8.992	17.33	10.51
24 x 14 x 40.8	125.80	411.25	462.71	5,388.89	10.00	13.104	11.646	37.00	24.00
35.7	110.45	369.94	446.99	5,009.80	10.07	13.542	11.208	32.48	21.00
30.6	94.99	326.40	430.94	4,596.75	10.13	14.083	10.667	27.94	18.00
25.5	79.42	280.39	414.47	4,139.36	10.14	14.763	9.987	23.36	15.00
20.4	63.75	231.63	397.38	3,621.76	10.08	15.636	9.114	18.75	12.00
17.85	55.94	206.31	388.58	3,335.36	10.00	16.167	8.583	16.45	10.51
24 x 12 x 40.8	119.00	372.26	453.27	5,058.77	9.88	13.589	11.161	35.00	24.00
35.7	104.50	335.01	438.01	4,698.10	9.93	14.024	10.726	30.73	21.00
30.6	89.89	295.72	422.40	4,305.04	9.97	14.558	10.192	26.44	18.00
25.5	75.17	254.16	406.34	3,869.94	9.96	15.226	9.524	22.11	15.00
20.4	60.35	210.08	389.65	3,378.18	9.88	16.080	8.670	17.75	12.00
17.85	52.96	187.18	381.03	3,106.54	9.78	16.597	8.153	15.58	10.51
24 x 10 x 40.8	112.20	333.15	442.12	4,702.20	9.71	14.114	10.636	33.00	24.00
35.7	98.55	299.99	427.39	4,362.63	9.75	14.542	10.208	28.98	21.00
30.6	84.79	264.98	412.30	3,992.41	9.77	15.067	9.683	24.94	18.00
25.5	70.92	227.90	396.76	3,582.67	9.74	15.720	9.030	20.86	15.00
20.4	56.95	188.51	380.55	3,120.10	9.63	16.551	8.199	16.75	12.00
17.85	49.98	168.02	372.15	2,865.03	9.53	17.051	7.699	14.70	10.51
24 x 8 x 40.8	105.40	293.93	428.72	4,315.85	9.49	14.683	10.067	31.00	24.00
35.7	92.60	264.90	414.65	4,000.55	9.52	15.102	9.648	27.23	21.00
30.6	79.69	234.19	400.21	3,656.51	9.52	15.614	9.136	23.44	18.00
25.5	66.67	201.61	385.29	3,275.72	9.48	16.248	8.502	19.61	15.00
20.4	53.55	166.93	369.67	2,846.21	9.34	17.051	7.699	15.75	12.00
17.85	47.00	148.86	361.54	2,609.74	9.22	17.532	7.218	13.82	10.51
24 x 6 x 40.8	98.60	254.60	412.32	3,895.82	9.22	15.301	9.449	29.00	24.00
35.7	86.65	229.73	399.08	3,608.55	9.23	15.708	9.042	25.48	21.00
30.6	74.59	203.34	385.45	3,294.66	9.21	16.202	8.548	21.94	18.00
25.5	62.42	175.28	371.31	2,946.99	9.15	16.813	7.937	18.36	15.00
20.4	50.15	145.32	356.45	2,555.00	8.99	17.582	7.168	14.75	12.00
17.85	44.02	129.68	348.66	2,339.45	8.86	18.040	6.710	12.95	10.51
21 x 20 x 40.8	136.00	410.73	449.23	4,666.65	9.06	10.388	11.362	40.00	21.00
35.7	119.37	398.01	404.09	4,361.16	9.16	10.793	10.957	35.11	18.37
30.6	102.64	356.40	384.99	4,025.31	9.25	11.294	10.456	30.19	15.75
25.5	85.80	305.92	371.60	3,649.40	9.31	11.929	9.821	25.23	13.12
20.4	68.85	252.39	357.67	3,218.41	9.31	12.752	8.998	20.25	10.50
17.85	60.40	224.61	350.46	2,977.19	9.27	13.255	8.495	17.77	9.20



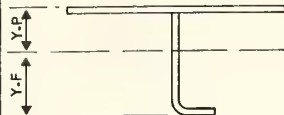
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

30.6 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	405.75	415.29	4,463.80	9.02	10.749	11.001	38.00	21.00
35.7	113.42	373.60	393.22	4,166.86	9.11	11.153	10.597	33.36	18.37
30.6	97.54	329.55	380.40	3,840.50	9.18	11.654	10.096	28.69	15.75
25.5	81.55	282.92	367.18	3,475.52	9.22	12.285	9.465	23.98	13.12
20.4	65.45	233.46	353.41	3,057.77	9.20	13.098	8.652	19.25	10.50
17.85	57.43	207.78	346.27	2,824.44	9.15	13.593	8.157	16.89	9.20
21 x 16 x 40.8	122.40	381.24	400.01	4,245.62	8.96	11.136	10.614	36.00	21.00
35.7	107.47	343.03	387.72	3,958.55	9.04	11.540	10.210	31.61	18.37
30.6	92.44	302.64	375.11	3,643.11	9.09	12.038	9.712	27.19	15.75
25.5	77.30	259.88	362.10	3,290.66	9.11	12.662	9.088	22.73	13.12
20.4	62.05	214.50	348.52	2,887.99	9.07	13.464	8.286	18.25	10.50
17.85	54.45	190.94	341.46	2,663.57	9.00	13.949	7.801	16.01	9.20
21 x 14 x 40.8	115.60	347.08	393.33	4,010.30	8.88	11.554	10.196	34.00	21.00
35.7	101.52	312.37	381.31	3,734.64	8.94	11.956	9.794	29.86	18.37
30.6	87.34	275.67	368.97	3,431.82	8.98	12.449	9.301	25.69	15.75
25.5	73.05	236.80	356.21	3,093.76	8.98	13.065	8.685	21.48	13.12
20.4	58.65	195.53	342.85	2,708.26	8.91	13.851	7.899	17.25	10.50
17.85	51.47	174.09	335.88	2,493.89	8.83	14.325	7.425	15.14	9.20
21 x 12 x 40.8	108.80	312.80	385.47	3,755.73	8.77	12.007	9.743	32.00	21.00
35.7	95.57	281.63	373.77	3,493.32	8.81	12.404	9.346	28.11	18.37
30.6	82.24	248.65	361.75	3,205.09	8.83	12.890	8.860	24.19	15.75
25.5	68.80	213.69	349.29	2,883.59	8.82	13.494	8.256	20.23	13.12
20.4	55.25	176.54	336.20	2,517.67	8.72	14.261	7.489	16.25	10.50
17.85	48.49	157.22	329.35	2,314.66	8.62	14.722	7.028	14.26	9.20
21 x 10 x 40.8	102.00	278.41	376.06	3,479.46	8.62	12.498	9.252	30.00	21.00
35.7	89.62	250.81	364.77	3,232.47	8.65	12.888	8.862	26.36	18.37
30.6	77.14	221.57	353.13	2,961.17	8.65	13.364	8.386	22.69	15.75
25.5	64.55	190.54	341.04	2,658.78	8.61	13.954	7.796	18.98	13.12
20.4	51.85	157.53	328.28	2,315.22	8.49	14.697	7.053	15.25	10.50
17.85	45.51	140.34	321.58	2,125.05	8.38	15.142	6.608	13.39	9.20
21 x 8 x 40.8	95.20	243.90	364.62	3,178.58	8.42	13.032	8.718	28.00	21.00
35.7	83.67	219.90	353.82	2,949.63	8.43	13.414	8.336	24.61	18.37
30.6	72.04	194.43	342.67	2,698.04	8.42	13.876	7.874	21.19	15.75
25.5	60.30	167.36	331.04	2,417.73	8.36	14.447	7.303	17.73	13.12
20.4	48.45	138.49	318.71	2,099.76	8.21	15.162	6.588	14.25	10.50
17.85	42.53	123.45	312.20	1,924.15	8.09	15.587	6.163	12.51	9.20
21 x 6 x 40.8	88.40	209.27	350.38	2,849.63	8.15	13.617	8.133	26.00	21.00
35.7	77.72	188.91	340.23	2,641.88	8.15	13.985	7.765	22.86	18.37
30.6	66.94	167.24	329.70	2,413.32	8.12	14.430	7.320	19.69	15.75
25.5	56.05	144.14	318.67	2,158.61	8.04	14.976	6.774	16.48	13.12
20.4	45.05	119.44	306.89	1,870.01	7.88	15.657	6.093	13.25	10.50
17.85	39.56	106.54	300.63	1,710.89	7.75	16.059	5.691	11.63	9.20
18 x 18 x 40.8	119.00	336.78	344.66	3,193.80	7.85	9.267	9.483	35.00	18.00
35.7	104.50	310.33	327.67	2,988.44	7.92	9.630	9.120	30.73	15.75
30.6	89.89	273.91	318.28	2,760.28	7.98	10.078	8.672	26.44	13.50
25.5	75.17	235.21	308.52	2,502.39	8.01	10.639	8.111	22.11	11.25
20.4	60.35	194.06	298.20	2,204.21	7.98	11.358	7.392	17.75	9.00
15.3	45.42	150.24	286.94	1,848.93	7.82	12.306	6.444	13.36	6.75
18 x 16 x 40.8	112.20	315.42	332.22	3,033.77	7.80	9.618	9.132	33.00	18.00
35.7	98.55	284.03	323.26	2,834.81	7.86	9.981	8.769	28.98	15.75
30.6	84.79	250.72	314.01	2,613.94	7.91	10.426	8.324	24.94	13.50
25.5	70.92	215.34	304.37	2,364.64	7.92	10.981	7.769	20.86	11.25
20.4	56.95	177.70	294.15	2,077.12	7.86	11.689	7.061	16.75	9.00
15.3	42.87	137.62	282.94	1,735.97	7.67	12.615	6.135	12.61	6.75
18 x 14 x 40.8	105.40	286.07	326.86	2,860.37	7.73	9.999	8.751	31.00	18.00
35.7	92.60	257.65	318.09	2,669.00	7.78	10.359	8.391	27.23	15.75



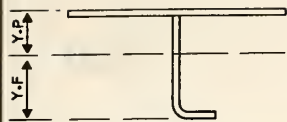
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 30.6	79.69	227.48	309.00	2,456.71	7.81	10.800	7.950	23.44	13.50
25.5	66.67	195.43	299.52	2,217.45	7.80	11.347	7.403	19.61	11.25
20.4	53.55	161.33	289.42	1,942.25	7.72	12.039	6.711	15.75	9.00
15.3	40.32	124.98	278.28	1,617.11	7.50	12.939	5.811	11.86	6.75
18 x 12 x 40.8	98.60	256.59	320.49	2,671.88	7.63	10.413	8.337	29.00	18.00
35.7	86.65	231.17	311.93	2,489.50	7.67	10.769	7.981	25.48	15.75
30.6	74.59	204.18	303.06	2,287.33	7.68	11.202	7.548	21.94	13.50
25.5	62.42	175.48	293.76	2,059.82	7.65	11.738	7.012	18.36	11.25
20.4	50.15	144.93	283.82	1,798.84	7.54	12.412	6.338	14.75	9.00
15.3	37.77	112.33	272.77	1,491.88	7.30	13.281	5.469	11.11	6.75
18 x 10 x 40.8	91.80	226.99	312.77	2,466.21	7.50	10.865	7.885	27.00	18.00
35.7	80.70	204.61	304.49	2,294.55	7.52	11.214	7.536	23.73	15.75
30.6	69.49	180.82	295.87	2,104.34	7.51	11.638	7.112	20.44	13.50
25.5	58.17	155.50	286.81	1,890.61	7.46	12.158	6.592	17.11	11.25
20.4	46.75	128.51	277.08	1,646.08	7.33	12.809	5.941	13.75	9.00
15.3	35.22	99.68	266.16	1,359.76	7.07	13.641	5.109	10.36	6.75
18 x 8 x 40.8	85.00	197.26	303.24	2,240.91	7.32	11.360	7.390	25.00	18.00
35.7	74.75	177.96	295.31	2,082.04	7.32	11.700	7.050	21.98	15.75
30.6	64.39	157.40	287.03	1,906.03	7.30	12.109	6.641	18.94	13.50
25.5	53.92	135.48	278.28	1,708.46	7.22	12.611	6.139	15.86	11.25
20.4	43.35	112.07	268.81	1,483.00	7.08	13.233	5.517	12.75	9.00
15.3	32.67	87.02	258.08	1,220.15	6.79	14.022	4.728	9.61	6.75
18 x 6 x 40.8	78.20	167.41	291.16	1,993.03	7.07	11.905	6.845	23.00	18.00
35.7	68.80	151.22	283.70	1,849.50	7.06	12.231	6.519	20.23	15.75
30.6	59.29	133.92	275.87	1,690.38	7.02	12.622	6.128	17.44	13.50
25.5	49.67	115.42	267.53	1,511.87	6.93	13.099	5.651	14.61	11.25
20.4	39.95	95.61	258.43	1,308.53	6.76	13.687	5.063	11.75	9.00
15.3	30.12	74.34	247.98	1,072.41	6.46	14.425	4.325	8.86	6.75



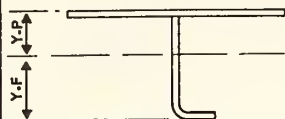
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ²	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	825.55	969.79	13,768.33	12.96	14.197	16.678	59.00	30.00
35.7	175.90	797.98	869.02	12,843.80	13.11	14.780	16.095	51.73	26.25
30.6	151.09	763.64	769.97	11,837.39	13.25	15.501	15.374	44.44	22.50
25.5	126.17	653.19	741.40	10,721.49	13.36	16.414	14.461	37.11	18.75
20.4	101.15	537.12	712.03	9,452.87	13.39	17.599	13.276	29.75	15.00
17.85	88.70	477.26	697.02	8,746.52	13.35	18.327	12.548	26.09	13.14
30 x 27 x 40.8	190.40	815.96	895.79	13,183.86	12.92	14.718	16.157	56.00	30.00
35.7	166.97	788.80	802.78	12,284.02	13.05	15.302	15.573	49.11	26.25
30.6	143.44	705.50	761.19	11,304.70	13.17	16.024	14.851	42.19	22.50
25.5	119.80	603.55	732.99	10,219.67	13.25	16.933	13.942	35.23	18.75
20.4	96.05	496.38	703.97	8,988.13	13.25	18.107	12.768	28.25	15.00
17.85	84.23	441.10	689.11	8,303.80	13.19	18.825	12.050	24.77	13.14
30 x 24 x 40.8	180.20	804.90	821.60	12,553.25	12.85	15.279	15.596	53.00	30.00
35.7	158.05	736.39	778.21	11,681.93	12.97	15.864	15.011	46.48	26.25
30.6	135.79	647.27	751.06	10,733.92	13.06	16.583	14.292	39.94	22.50
25.5	113.42	553.84	723.31	9,684.43	13.11	17.486	13.389	33.36	18.75
20.4	90.95	455.61	694.69	8,495.34	13.07	18.646	12.229	26.75	15.00
17.85	79.76	404.93	680.01	7,836.01	12.99	19.352	11.523	23.46	13.14
30 x 21 x 40.8	170.00	747.22	792.00	11,870.80	12.75	15.887	14.988	50.00	30.00
35.7	149.12	669.87	765.87	11,032.56	12.85	16.470	14.405	43.86	26.25
30.6	128.14	588.95	739.26	10,120.79	12.92	17.185	13.690	37.69	22.50
25.5	107.05	504.08	712.03	9,112.35	12.94	18.077	12.798	31.48	18.75
20.4	85.85	414.81	683.89	7,971.90	12.86	19.218	11.657	25.25	15.00
17.85	75.30	368.73	669.42	7,340.99	12.76	19.909	10.966	22.15	13.14
30 x 18 x 40.8	159.80	672.65	776.75	11,129.86	12.61	16.546	14.329	47.00	30.00
35.7	140.20	603.21	751.29	10,330.10	12.68	17.125	13.750	41.23	26.25
30.6	120.49	530.53	725.33	9,460.43	12.73	17.832	13.043	35.44	22.50
25.5	100.67	454.26	698.73	8,499.46	12.71	18.711	12.164	29.61	18.75
20.4	80.75	373.97	671.17	7,414.85	12.60	19.827	11.048	23.75	15.00
17.85	70.83	332.51	656.96	6,816.26	12.47	20.500	10.375	20.83	13.14
30 x 15 x 40.8	149.60	597.88	758.46	10,322.55	12.42	17.265	13.610	44.00	30.00
35.7	131.27	536.41	733.81	9,567.76	12.47	17.837	13.038	38.61	26.25
30.6	112.84	472.01	708.65	8,747.16	12.48	18.532	12.343	33.19	22.50
25.5	94.30	404.37	682.81	7,841.25	12.44	19.391	11.484	27.73	18.75
20.4	75.65	333.10	655.96	6,820.84	12.28	20.477	10.398	22.25	15.00
17.85	66.36	296.26	642.07	6,259.07	12.14	21.127	9.748	19.52	13.14
30 x 12 x 40.8	139.40	522.92	736.11	9,439.54	12.15	18.051	12.824	41.00	30.00
35.7	122.35	469.48	712.47	8,737.55	12.17	18.611	12.264	35.98	26.25
30.6	105.19	413.41	688.30	7,974.36	12.16	19.289	11.586	30.94	22.50
25.5	87.92	354.43	663.41	7,132.49	12.09	20.124	10.751	25.86	18.75
20.4	70.55	292.20	637.46	6,186.07	11.90	21.171	9.704	20.75	15.00
17.85	61.89	259.99	623.98	5,666.32	11.73	21.794	9.081	18.20	13.14
30 x 9 x 40.8	129.20	447.77	708.17	8,469.66	11.79	18.915	11.960	38.00	30.00
35.7	113.42	402.40	685.83	7,829.97	11.79	19.458	11.417	33.36	26.25
30.6	97.54	354.70	662.93	7,134.25	11.75	20.113	10.762	28.69	22.50
25.5	81.55	304.43	639.26	6,367.13	11.65	20.915	9.960	23.98	18.75
20.4	65.45	251.26	614.47	5,506.20	11.42	21.914	8.961	19.25	15.00
17.85	57.43	223.70	601.52	5,034.49	11.24	22.505	8.370	16.89	13.14
30 x 6 x 40.8	119.00	372.43	672.25	7,399.41	11.30	19.868	11.007	35.00	30.00
35.7	104.50	335.18	651.63	6,833.69	11.28	20.388	10.487	30.73	26.25
30.6	89.89	295.91	630.41	6,217.62	11.22	21.012	9.863	26.44	22.50
25.5	75.17	254.37	608.37	5,538.10	11.08	21.772	9.103	22.11	18.75
20.4	60.35	210.29	585.12	4,776.24	10.83	22.712	8.163	17.75	15.00
17.85	52.96	187.39	572.88	4,359.59	10.64	23.265	7.610	15.58	13.14
27 x 27 x 40.8	180.20	718.21	790.89	10,492.10	11.75	13.266	14.609	53.00	27.00
35.7	158.05	696.20	708.95	9,791.33	11.87	13.811	14.064	46.48	23.62
30.6	135.79	623.09	673.76	9,023.64	11.98	14.482	13.393	39.94	20.25



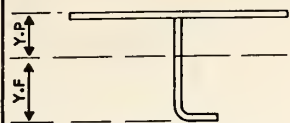
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 25.5	113.42	532.96	650.75	8,167.31	12.04	15.324	12.551	33.36	16.87
20.4	90.95	438.14	626.91	7,188.90	12.02	16.408	11.467	26.75	13.50
17.85	79.76	389.21	614.62	6,642.76	11.96	17.067	10.808	23.46	11.83
27 x 24 x 40.8	170.00	708.81	723.86	9,982.82	11.70	13.791	14.084	50.00	27.00
35.7	149.12	648.93	687.16	9,303.24	11.80	14.336	13.539	43.86	23.62
30.6	128.14	570.41	665.06	8,559.16	11.88	15.005	12.870	37.69	20.25
25.5	107.05	487.98	642.37	7,730.16	11.91	15.841	12.034	31.48	16.87
20.4	85.85	401.24	618.82	6,785.08	11.86	16.910	10.965	25.25	13.50
17.85	75.30	356.47	606.65	6,258.88	11.78	17.558	10.317	22.15	11.83
27 x 21 x 40.8	159.80	656.63	697.79	9,429.89	11.61	14.361	13.514	47.00	27.00
35.7	140.20	588.76	676.56	8,775.25	11.69	14.905	12.970	41.23	23.62
30.6	120.49	517.63	654.87	8,058.90	11.75	15.569	12.306	35.44	20.25
25.5	100.67	442.93	632.56	7,261.83	11.75	16.395	11.480	29.61	16.87
20.4	80.75	364.30	609.35	6,355.32	11.66	17.445	10.430	23.75	13.50
17.85	70.83	323.71	597.32	5,851.97	11.56	18.078	9.797	20.83	11.83
27 x 18 x 40.8	149.60	589.21	684.66	8,827.44	11.48	14.982	12.893	44.00	27.00
35.7	131.27	528.45	663.95	8,202.26	11.54	15.521	12.354	38.61	23.62
30.6	112.84	464.75	642.76	7,518.56	11.57	16.178	11.697	33.19	20.25
25.5	94.30	397.82	620.92	6,758.88	11.55	16.990	10.885	27.73	16.87
20.4	75.65	327.33	598.13	5,897.06	11.42	18.016	9.859	22.25	13.50
17.85	66.36	290.92	586.27	5,419.90	11.29	18.630	9.245	19.52	11.83
27 x 15 x 40.8	139.40	521.58	668.79	8,168.50	11.30	15.661	12.214	41.00	27.00
35.7	122.35	468.00	648.71	7,578.25	11.34	16.193	11.682	35.98	23.62
30.6	105.19	411.77	628.13	6,933.13	11.34	16.837	11.038	30.94	20.25
25.5	87.92	352.65	606.87	6,217.29	11.28	17.630	10.245	25.86	16.87
20.4	70.55	290.32	584.60	5,407.35	11.12	18.625	9.250	20.75	13.50
17.85	61.89	258.11	572.97	4,960.25	10.98	19.218	8.657	18.20	11.83
27 x 12 x 40.8	129.20	453.75	649.18	7,444.74	11.05	16.407	11.468	38.00	27.00
35.7	113.42	407.40	629.91	6,896.10	11.06	16.927	10.948	33.36	23.62
30.6	97.54	358.70	610.10	6,296.70	11.04	17.554	10.321	28.69	20.25
25.5	81.55	307.42	589.59	5,632.46	10.95	18.322	9.553	23.98	16.87
20.4	65.45	253.28	567.98	4,882.84	10.75	19.278	8.597	19.25	13.50
17.85	57.43	225.27	556.65	4,470.29	10.59	19.844	8.031	16.89	11.83
27 x 9 x 40.8	119.00	385.72	624.36	6,646.10	10.71	17.230	10.645	35.00	27.00
35.7	104.50	346.65	606.13	6,147.28	10.70	17.733	10.142	30.73	23.62
30.6	89.89	305.53	587.35	5,602.31	10.65	18.337	9.538	26.44	20.25
25.5	75.17	262.13	567.80	4,998.98	10.53	19.071	8.804	22.11	16.87
20.4	60.35	216.21	547.09	4,319.69	10.30	19.979	7.896	17.75	13.50
17.85	52.96	192.41	536.14	3,946.93	10.12	20.513	7.362	15.58	11.83
27 x 6 x 40.8	108.80	317.49	591.92	5,760.30	10.24	18.143	9.732	32.00	27.00
35.7	95.57	285.76	575.12	5,321.51	10.21	18.622	9.253	28.11	23.62
30.6	82.24	252.25	557.71	4,841.67	10.13	19.194	8.681	24.19	20.25
25.5	68.80	216.77	539.49	4,310.52	9.99	19.885	7.990	20.23	16.87
20.4	55.25	179.10	520.01	3,713.47	9.73	20.734	7.141	16.25	13.50
17.85	48.49	159.52	509.62	3,386.63	9.54	21.230	6.645	14.26	11.83
24 x 24 x 40.8	159.80	615.77	629.11	7,740.73	10.52	12.304	12.571	47.00	24.00
35.7	140.20	564.17	598.69	7,225.16	10.61	12.807	12.068	41.23	21.00
30.6	120.49	495.97	581.17	6,656.55	10.68	13.421	11.454	35.44	18.00
25.5	100.67	424.25	563.07	6,018.48	10.70	14.186	10.689	29.61	15.00
20.4	80.75	348.69	544.10	5,286.09	10.64	15.160	9.715	23.75	12.00
17.85	70.83	309.69	534.20	4,876.51	10.55	15.746	9.129	20.83	10.51
24 x 22 x 40.8	153.00	589.15	609.79	7,453.68	10.47	12.652	12.223	45.00	24.00
35.7	134.25	528.37	592.90	6,949.80	10.55	13.153	11.722	39.48	21.00
30.6	115.39	464.54	575.56	6,394.45	10.60	13.765	11.110	33.94	18.00
25.5	96.42	397.41	557.63	5,771.98	10.60	14.524	10.351	28.36	15.00
20.4	77.35	326.68	538.81	5,058.91	10.52	15.486	9.389	22.75	12.00
17.85	67.85	290.16	528.95	4,660.98	10.42	16.063	8.812	19.96	10.51

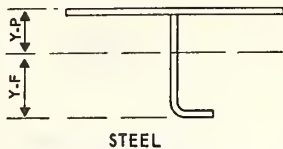


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 20 x 40.8	146.20	549.10	603.06	7,149.24	10.41	13.020	11.855	43.00	24.00
35.7	128.30	492.50	586.39	6,658.58	10.47	13.520	11.355	37.73	21.00
30.6	110.29	433.06	569.27	6,118.16	10.51	14.128	10.747	32.44	18.00
25.5	92.17	370.54	551.53	5,513.17	10.49	14.879	9.996	27.11	15.00
20.4	73.95	304.65	532.86	4,821.57	10.38	15.827	9.048	21.75	12.00
17.85	64.87	270.63	523.07	4,436.47	10.27	16.393	8.482	19.08	10.51
24 x 18 x 40.8	139.40	508.95	595.43	6,825.77	10.33	13.411	11.464	41.00	24.00
35.7	122.35	456.57	579.02	6,350.07	10.38	13.908	10.967	35.98	21.00
30.6	105.19	401.54	562.15	5,826.49	10.40	14.510	10.365	30.94	18.00
25.5	87.92	343.64	544.63	5,241.12	10.36	15.252	9.623	25.86	15.00
20.4	70.55	282.60	526.15	4,573.36	10.23	16.183	8.692	20.75	12.00
17.85	61.89	251.08	516.43	4,202.41	10.10	16.738	8.137	18.20	10.51
24 x 16 x 40.8	132.60	468.71	586.72	6,481.43	10.23	13.828	11.047	39.00	24.00
35.7	116.40	420.57	570.62	6,022.69	10.26	14.320	10.555	34.23	21.00
30.6	100.09	369.97	554.02	5,518.13	10.26	14.915	9.960	29.44	18.00
25.5	83.67	316.71	536.77	4,954.77	10.20	15.644	9.231	24.61	15.00
20.4	67.15	260.54	518.51	4,313.54	10.05	16.556	8.319	19.75	12.00
17.85	58.92	231.52	508.87	3,958.17	9.91	17.097	7.778	17.33	10.51
24 x 14 x 40.8	125.80	428.38	576.68	6,114.13	10.10	14.273	10.602	37.00	24.00
35.7	110.45	384.50	560.92	5,674.65	10.12	14.758	10.117	32.48	21.00
30.6	94.99	338.36	544.67	5,191.60	10.10	15.343	9.532	27.94	18.00
25.5	79.42	289.76	527.73	4,652.97	10.02	16.058	8.817	23.36	15.00
20.4	63.75	238.47	509.73	4,041.27	9.84	16.947	7.928	18.75	12.00
17.85	55.94	211.95	500.19	3,703.08	9.69	17.472	7.403	16.45	10.51
24 x 12 x 40.8	119.00	387.95	564.97	5,721.50	9.93	14.748	10.127	35.00	24.00
35.7	104.50	348.37	549.64	5,303.94	9.94	15.225	9.650	30.73	21.00
30.6	89.89	306.70	533.78	4,845.25	9.90	15.798	9.077	26.44	18.00
25.5	75.17	262.78	517.21	4,334.44	9.81	16.495	8.380	22.11	15.00
20.4	60.35	216.38	499.54	3,755.62	9.60	17.357	7.518	17.75	12.00
17.85	52.96	192.37	490.13	3,436.40	9.44	17.864	7.011	15.58	10.51
24 x 10 x 40.8	112.20	347.43	551.14	5,300.82	9.73	15.257	9.618	33.00	24.00
35.7	98.55	312.17	536.32	4,908.26	9.72	15.723	9.152	28.98	21.00
30.6	84.79	275.00	520.95	4,477.22	9.67	16.281	8.594	24.94	18.00
25.5	70.92	235.77	504.84	3,997.74	9.55	16.956	7.919	20.86	15.00
20.4	56.95	194.27	487.56	3,455.59	9.33	17.787	7.088	16.75	12.00
17.85	49.98	172.77	478.32	3,157.31	9.16	18.274	6.601	14.70	10.51
24 x 8 x 40.8	105.40	306.82	534.55	4,848.97	9.48	15.804	9.071	31.00	24.00
35.7	92.60	275.90	520.36	4,485.00	9.45	16.256	8.619	27.23	21.00
30.6	79.69	243.25	505.61	4,085.39	9.38	16.795	8.080	23.44	18.00
25.5	66.67	208.73	490.06	3,641.27	9.25	17.445	7.430	19.61	15.00
20.4	53.55	172.15	473.29	3,140.06	9.01	18.240	6.635	15.75	12.00
17.85	47.00	153.17	464.26	2,864.93	8.82	18.704	6.171	13.82	10.51
24 x 6 x 40.8	98.60	266.11	514.30	4,362.36	9.16	16.393	8.482	29.00	24.00
35.7	86.65	239.56	500.92	4,031.18	9.12	16.827	8.048	25.48	21.00
30.6	74.59	211.46	486.93	3,667.40	9.04	17.343	7.532	21.94	18.00
25.5	62.42	181.67	472.11	3,263.24	8.89	17.963	6.912	18.36	15.00
20.4	50.15	150.01	455.99	2,807.80	8.63	18.717	6.158	14.75	12.00
17.85	44.02	133.56	447.24	2,558.29	8.44	19.155	5.720	12.95	10.51
21 x 20 x 40.8	136.00	467.16	515.36	5,360.19	9.23	11.474	10.401	40.00	21.00
35.7	119.37	419.18	502.62	4,999.84	9.28	11.928	9.947	35.11	18.37
30.6	102.64	368.67	489.45	4,599.84	9.30	12.477	9.398	30.19	15.75
25.5	85.80	315.42	475.66	4,148.73	9.28	13.153	8.722	25.23	13.12
20.4	68.85	259.25	460.94	3,629.61	9.16	14.001	7.874	20.25	10.50
17.85	60.40	230.22	453.09	3,339.37	9.05	14.505	7.370	17.77	9.20
21 x 18 x 40.8	129.20	431.91	509.04	5,111.26	9.16	11.834	10.041	38.00	21.00
35.7	113.42	387.60	496.48	4,761.51	9.19	12.284	9.591	33.36	18.37
30.6	97.54	340.94	483.46	4,373.71	9.20	12.828	9.047	28.69	15.75



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

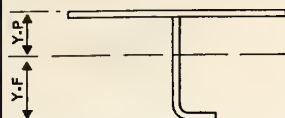
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35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 25.5	81.55	291.75	469.81	3,937.11	9.16	13.495	8.380	23.98	13.12
20.4	65.45	239.84	455.18	3,436.03	9.02	14.326	7.549	19.25	10.50
17.85	57.43	213.02	447.36	3,156.65	8.90	14.819	7.056	16.89	9.20
21 x 16 x 40.8	122.40	396.57	501.78	4,845.45	9.06	12.219	9.656	36.00	21.00
35.7	107.47	355.95	489.42	4,507.91	9.09	12.664	9.211	31.61	18.37
30.6	92.44	313.17	476.59	4,134.05	9.08	13.201	8.674	27.19	15.75
25.5	77.30	268.05	463.10	3,713.91	9.01	13.855	8.020	22.73	13.12
20.4	62.05	220.42	448.59	3,233.05	8.86	14.668	7.207	18.25	10.50
17.85	54.45	195.80	440.80	2,965.71	8.72	15.147	6.728	16.01	9.20
21 x 14 x 40.8	115.60	361.13	493.34	4,561.00	8.95	12.630	9.245	34.00	21.00
35.7	101.52	324.23	481.23	4,237.51	8.96	13.069	8.806	29.86	18.37
30.6	87.34	285.35	468.62	3,879.62	8.93	13.596	8.279	25.69	15.75
25.5	73.05	244.32	455.33	3,478.16	8.85	14.236	7.639	21.48	13.12
20.4	58.65	200.98	440.96	3,019.99	8.67	15.026	6.849	17.25	10.50
17.85	51.47	178.57	433.21	2,766.00	8.52	15.490	6.385	15.14	9.20
21 x 12 x 40.8	108.80	325.59	483.41	4,255.85	8.80	13.071	8.804	32.00	21.00
35.7	95.57	292.44	471.60	3,948.59	8.79	13.502	8.373	28.11	18.37
30.6	82.24	257.48	459.27	3,609.01	8.75	14.017	7.858	24.19	15.75
25.5	68.80	220.56	446.21	3,228.78	8.65	14.639	7.236	20.23	13.12
20.4	55.25	181.53	432.03	2,796.06	8.44	15.403	6.472	16.25	10.50
17.85	48.49	161.32	424.34	2,556.89	8.29	15.849	6.026	14.26	9.20
21 x 10 x 40.8	102.00	289.95	471.56	3,927.68	8.61	13.546	8.329	30.00	21.00
35.7	89.62	260.58	460.11	3,639.18	8.59	13.966	7.909	26.36	18.37
30.6	77.14	229.56	448.13	3,320.62	8.53	14.465	7.410	22.69	15.75
25.5	64.55	196.77	435.38	2,964.53	8.41	15.066	6.809	18.98	13.12
20.4	51.85	162.06	421.44	2,560.42	8.19	15.800	6.075	15.25	10.50
17.85	45.51	144.07	413.83	2,337.71	8.02	16.226	5.649	13.39	9.20
21 x 8 x 40.8	95.20	254.22	457.17	3,573.76	8.37	14.058	7.817	28.00	21.00
35.7	83.67	228.65	446.19	3,307.02	8.34	14.463	7.412	24.61	18.37
30.6	72.04	201.60	434.64	3,012.64	8.26	14.944	6.931	21.19	15.75
25.5	60.30	172.95	422.29	2,684.05	8.12	15.519	6.356	17.73	13.12
20.4	48.45	142.57	408.67	2,312.11	7.88	16.217	5.658	14.25	10.50
17.85	42.53	126.81	401.18	2,107.70	7.71	16.621	5.254	12.51	9.20
21 x 6 x 40.8	88.40	218.38	439.32	3,190.95	8.07	14.612	7.263	26.00	21.00
35.7	77.72	196.65	428.95	2,949.50	8.02	14.999	6.876	22.86	18.37
30.6	66.94	173.59	417.98	2,683.01	7.93	15.456	6.419	19.69	15.75
25.5	56.05	149.11	406.15	2,385.81	7.78	16.001	5.874	16.48	13.12
20.4	45.05	123.07	392.98	2,050.09	7.52	16.658	5.217	13.25	10.50
17.85	39.56	109.53	385.67	1,866.05	7.34	17.036	4.839	11.63	9.20
18 x 18 x 40.8	119.00	358.12	425.48	3,670.30	7.96	10.249	8.626	35.00	18.00
35.7	104.50	321.59	416.29	3,424.54	7.99	10.649	8.226	30.73	15.75
30.6	89.89	282.99	406.66	3,149.65	7.98	11.130	7.745	26.44	13.50
25.5	75.17	242.20	396.40	2,837.67	7.93	11.716	7.159	22.11	11.25
20.4	60.35	199.07	385.16	2,477.14	7.80	12.444	6.431	17.75	9.00
15.3	45.42	153.47	372.13	2,050.90	7.51	13.364	5.511	13.36	6.75
18 x 16 x 40.8	112.20	327.76	419.58	3,473.26	7.88	10.597	8.278	33.00	18.00
35.7	98.55	294.36	410.51	3,235.81	7.89	10.993	7.882	28.98	15.75
30.6	84.79	259.07	400.98	2,970.64	7.87	11.467	7.408	24.94	13.50
25.5	70.92	221.77	390.80	2,670.43	7.81	12.042	6.833	20.86	11.25
20.4	56.95	182.32	379.58	2,324.70	7.65	12.751	6.124	16.75	9.00
15.3	42.87	140.60	366.47	1,917.93	7.34	13.641	5.234	12.61	6.75
18 x 14 x 40.8	105.40	297.29	412.67	3,261.64	7.77	10.971	7.904	31.00	18.00
35.7	92.60	267.06	403.75	3,033.93	7.77	11.361	7.514	27.23	15.75
30.6	79.69	235.10	394.34	2,780.07	7.74	11.825	7.050	23.44	13.50
25.5	66.67	201.31	384.25	2,493.38	7.65	12.386	6.489	19.61	11.25
20.4	53.55	165.56	373.07	2,164.38	7.48	13.073	5.802	15.75	9.00
15.3	40.32	127.72	359.89	1,779.24	7.15	13.931	4.944	11.86	6.75

**PROPERTIES OF
COMBINED BEAM AND PLATE
FLANGED PLATE**

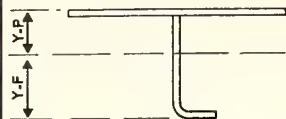
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STEEL

35.7 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 12 x 40.8	98.60	266.72	404.46	3,033.74	7.64	11.374	7.501	29.00	18.00
35.7	86.65	239.68	395.72	2,817.47	7.63	11.755	7.120	25.48	15.75
30.6	74.59	211.08	386.47	2,576.77	7.58	12.208	6.667	21.94	13.50
25.5	62.42	180.81	376.50	2,305.61	7.47	12.751	6.124	18.36	11.25
20.4	50.15	148.77	365.38	1,995.56	7.27	13.413	5.462	14.75	9.00
15.3	37.77	114.83	352.15	1,634.45	6.93	14.234	4.641	11.11	6.75
18 x 10 x 40.8	91.80	236.05	394.54	2,787.60	7.47	11.810	7.065	27.00	18.00
35.7	80.70	212.23	386.04	2,584.81	7.44	12.179	6.696	23.73	15.75
30.6	69.49	187.01	377.00	2,359.43	7.37	12.617	6.258	20.44	13.50
25.5	58.17	160.29	367.19	2,106.14	7.25	13.139	5.736	17.11	11.25
20.4	46.75	131.97	356.16	1,817.54	7.04	13.772	5.103	13.75	9.00
15.3	35.22	101.94	342.90	1,483.14	6.67	14.550	4.325	10.36	6.75
18 x 8 x 40.8	85.00	205.27	382.31	2,520.96	7.25	12.281	6.594	25.00	18.00
35.7	74.75	184.71	374.12	2,334.03	7.21	12.636	6.239	21.98	15.75
30.6	64.39	162.89	365.37	2,126.53	7.12	13.055	5.820	18.94	13.50
25.5	53.92	139.74	355.79	1,893.82	6.98	13.552	5.323	15.86	11.25
20.4	43.35	115.16	344.91	1,629.56	6.75	14.150	4.725	12.75	9.00
15.3	32.67	89.03	331.67	1,324.86	6.38	14.880	3.995	9.61	6.75
18 x 6 x 40.8	78.20	174.39	366.88	2,231.13	6.97	12.794	6.081	23.00	18.00
35.7	68.80	157.11	359.12	2,062.95	6.91	13.130	5.745	20.23	15.75
30.6	59.29	138.73	350.75	1,876.35	6.81	13.525	5.350	17.44	13.50
25.5	49.67	119.16	341.50	1,667.38	6.66	13.993	4.882	14.61	11.25
20.4	39.95	98.33	330.87	1,430.75	6.42	14.551	4.324	11.75	9.00
15.3	30.12	76.12	317.71	1,159.13	6.03	15.227	3.648	8.86	6.75



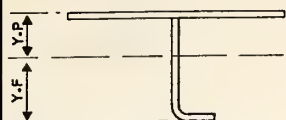
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,002.08	1,002.26	15,533.67	13.21	15.501	15.499	59.00	30.00
35.7	175.90	896.26	974.68	14,474.28	13.31	16.150	14.850	51.73	26.25
30.6	151.09	785.82	946.47	13,309.80	13.37	16.937	14.063	44.44	22.50
25.5	126.17	670.40	917.41	12,007.68	13.38	17.911	13.089	37.11	18.75
20.4	101.15	549.54	887.05	10,519.07	13.27	19.141	11.859	29.75	15.00
17.85	88.70	487.43	871.23	9,689.42	13.14	19.878	11.122	26.09	13.14
30 x 27 x 40.8	190.40	925.74	990.61	14,834.74	13.13	16.025	14.975	56.00	30.00
35.7	166.97	828.06	963.40	13,804.57	13.21	16.671	14.329	49.11	26.25
30.6	143.44	726.11	935.55	12,673.25	13.25	17.454	13.546	42.19	22.50
25.5	119.80	619.54	906.81	11,410.20	13.23	18.417	12.583	35.23	18.75
20.4	96.05	507.95	876.70	9,969.92	13.08	19.628	11.372	28.25	15.00
17.85	84.23	450.58	860.98	9,169.36	12.94	20.350	10.650	24.77	13.14
30 x 24 x 40.8	180.20	849.24	977.19	14,085.31	13.03	16.586	14.414	53.00	30.00
35.7	158.05	759.74	950.41	13,088.91	13.08	17.228	13.772	46.48	26.25
30.6	135.79	666.32	922.97	11,995.75	13.10	18.003	12.997	39.94	22.50
25.5	113.42	568.64	894.61	10,777.37	13.04	18.953	12.047	33.36	18.75
20.4	90.95	466.32	864.81	9,391.75	12.86	20.140	10.860	26.75	15.00
17.85	79.76	413.71	849.20	8,623.74	12.70	20.845	10.155	23.46	13.14
30 x 21 x 40.8	170.00	772.57	961.53	13,279.68	12.88	17.189	13.811	50.00	30.00
35.7	149.12	691.30	935.28	12,322.38	12.92	17.825	13.175	43.86	26.25
30.6	128.14	606.44	908.33	11,273.22	12.91	18.589	12.411	37.69	22.50
25.5	107.05	517.69	880.41	10,105.94	12.82	19.521	11.479	31.48	18.75
20.4	85.85	424.67	851.00	8,782.18	12.61	20.680	10.320	25.25	15.00
17.85	75.30	376.82	835.53	8,050.62	12.43	21.365	9.635	22.15	13.14
30 x 18 x 40.8	159.80	695.73	943.06	12,411.30	12.70	17.839	13.161	47.00	30.00
35.7	140.20	622.74	917.43	11,499.37	12.71	18.466	12.534	41.23	26.25
30.6	120.49	546.49	891.07	10,501.00	12.67	19.215	11.785	35.44	22.50
25.5	100.67	466.68	863.71	9,392.28	12.55	20.126	10.874	29.61	18.75
20.4	80.75	382.99	834.75	8,138.59	12.31	21.250	9.750	23.75	15.00
17.85	70.83	339.91	819.46	7,447.88	12.10	21.911	9.089	20.83	13.14
30 x 15 x 40.8	149.60	618.72	920.91	11,472.53	12.45	18.542	12.458	44.00	30.00
35.7	131.27	554.07	896.07	10,613.40	12.44	19.155	11.845	38.61	26.25
30.6	112.84	486.46	870.43	9,673.80	12.37	19.886	11.114	33.19	22.50
25.5	94.30	415.63	843.74	8,632.27	12.23	20.769	10.231	27.73	18.75
20.4	75.65	341.28	815.37	7,458.05	11.95	21.853	9.147	22.25	15.00
17.85	66.36	302.98	800.31	6,813.14	11.73	22.487	8.513	19.52	13.14
30 x 12 x 40.8	139.40	541.55	893.89	10,454.46	12.13	19.305	11.695	41.00	30.00
35.7	122.35	485.27	870.00	9,656.95	12.10	19.900	11.100	35.98	26.25
30.6	105.19	426.34	845.30	8,785.52	12.01	20.607	10.393	30.94	22.50
25.5	87.92	364.53	819.47	7,821.24	11.83	21.456	9.544	25.86	18.75
20.4	70.55	299.55	791.85	6,737.28	11.52	22.492	8.508	20.75	15.00
17.85	61.89	266.04	777.09	6,143.80	11.29	23.094	7.906	18.20	13.14
30 x 9 x 40.8	129.20	464.21	860.18	9,346.57	11.72	20.134	10.866	38.00	30.00
35.7	113.42	416.36	837.54	8,621.26	11.66	20.706	10.294	33.36	26.25
30.6	97.54	366.15	814.03	7,829.14	11.55	21.382	9.618	28.69	22.50
25.5	81.55	313.38	789.32	6,953.87	11.35	22.190	8.810	23.98	18.75
20.4	65.45	257.78	762.70	5,972.61	11.01	23.169	7.831	19.25	15.00
17.85	57.43	229.07	748.36	5,436.95	10.77	23.735	7.265	16.89	13.14
30 x 6 x 40.8	119.00	386.71	816.94	8,136.44	11.19	21.040	9.960	35.00	30.00
35.7	104.50	347.32	795.97	7,496.06	11.11	21.582	9.418	30.73	26.25
30.6	89.89	305.88	774.07	6,796.51	10.97	22.220	8.780	26.44	22.50
25.5	75.17	262.18	750.88	6,024.09	10.75	22.977	8.023	22.11	18.75
20.4	60.35	215.99	725.63	5,159.90	10.40	23.889	7.111	17.75	15.00
17.85	52.96	192.09	711.89	4,689.34	10.14	24.413	6.587	15.58	13.14
27 x 27 x 40.8	180.20	816.76	875.94	11,834.41	11.94	14.489	13.511	53.00	27.00
35.7	158.05	730.66	853.84	11,024.50	12.01	15.088	12.912	46.48	23.62



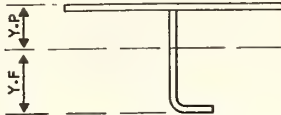
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	640.68	831.11	10,130.06	12.04	15.811	12.189	39.94	20.25
35.5	113.42	546.53	807.50	9,126.07	12.00	16.698	11.302	33.36	16.87
20.4	90.95	447.88	782.51	7,975.70	11.85	17.808	10.192	26.75	13.50
17.85	79.76	397.18	769.31	7,334.40	11.71	18.466	9.534	23.46	11.83
27 x 24 x 40.8	170.00	747.63	864.40	11,225.03	11.85	15.014	12.986	50.00	27.00
35.7	149.12	668.90	842.62	10,440.86	11.89	15.609	12.391	43.86	23.62
30.6	128.14	586.60	820.18	9,575.99	11.89	16.325	11.675	37.69	20.25
25.5	107.05	500.48	796.82	8,607.23	11.83	17.198	10.802	31.48	16.87
20.4	85.85	410.23	772.01	7,500.71	11.65	18.284	9.716	25.25	13.50
17.85	75.30	363.83	758.86	6,885.84	11.49	18.926	9.074	22.15	11.83
27 x 21 x 40.8	159.80	678.34	850.87	10,568.18	11.72	15.580	12.420	47.00	27.00
35.7	140.20	607.01	829.47	9,814.22	11.74	16.168	11.832	41.23	23.62
30.6	120.49	532.44	807.39	8,983.83	11.72	16.873	11.127	35.44	20.25
25.5	100.67	454.38	784.33	8,055.76	11.63	17.729	10.271	29.61	16.87
20.4	80.75	372.55	759.75	6,999.22	11.41	18.788	9.212	23.75	13.50
17.85	70.83	330.46	746.66	6,414.09	11.23	19.410	8.590	20.83	11.83
27 x 18 x 40.8	149.60	608.87	834.79	9,858.10	11.54	16.191	11.809	44.00	27.00
35.7	131.27	545.00	813.86	9,139.64	11.54	16.770	11.230	38.61	23.62
30.6	112.84	478.20	792.20	8,349.51	11.50	17.460	10.540	33.19	20.25
25.5	94.30	408.23	769.53	7,468.46	11.37	18.295	9.705	27.73	16.87
20.4	75.65	334.84	745.24	6,468.93	11.13	19.320	8.680	22.25	13.50
17.85	66.36	297.07	732.24	5,917.31	10.93	19.919	8.081	19.52	11.83
27 x 15 x 40.8	139.40	539.22	815.35	9,088.03	11.31	16.854	11.146	41.00	27.00
35.7	122.35	482.87	795.01	8,411.40	11.29	17.420	10.580	35.98	23.62
30.6	105.19	423.87	773.90	7,668.36	11.22	18.091	9.909	30.94	20.25
25.5	87.92	362.03	751.70	6,841.75	11.07	18.898	9.102	25.86	16.87
20.4	70.55	297.10	727.80	5,907.30	10.79	19.883	8.117	20.75	13.50
17.85	61.89	263.66	714.92	5,393.44	10.58	20.456	7.544	18.20	11.83
27 x 12 x 40.8	129.20	469.41	791.40	8,250.03	11.01	17.575	10.425	38.00	27.00
35.7	113.42	420.61	771.80	7,622.83	10.97	18.123	9.877	33.36	23.62
30.6	97.54	369.46	751.39	6,934.98	10.87	18.770	9.230	28.69	20.25
25.5	81.55	315.78	729.83	6,171.50	10.69	19.544	8.456	23.98	16.87
20.4	65.45	259.33	706.43	5,311.45	10.38	20.481	7.519	19.25	13.50
17.85	57.43	230.23	693.74	4,840.22	10.16	21.023	6.977	16.89	11.83
27 x 9 x 40.8	119.00	399.42	761.13	7,334.70	10.62	18.363	9.637	35.00	27.00
35.7	104.50	358.23	742.52	6,766.11	10.55	18.888	9.112	30.73	23.62
30.6	89.89	314.97	723.05	6,143.13	10.43	19.504	8.496	26.44	20.25
25.5	75.17	269.47	702.34	5,453.03	10.23	20.236	7.764	22.11	16.87
20.4	60.35	221.54	679.65	4,678.18	9.90	21.117	6.883	17.75	13.50
17.85	52.96	196.79	667.23	4,255.09	9.66	21.623	6.377	15.58	11.83
27 x 6 x 40.8	108.80	329.25	721.69	6,330.82	10.10	19.228	8.772	32.00	27.00
35.7	95.57	295.72	704.44	5,832.00	10.02	19.721	8.279	28.11	23.62
30.6	82.24	260.40	686.27	5,285.54	9.88	20.298	7.702	24.19	20.25
25.5	68.80	223.12	666.75	4,680.92	9.65	20.980	7.020	20.23	16.87
20.4	55.25	183.72	645.11	4,003.83	9.30	21.794	6.206	16.25	13.50
17.85	48.49	163.32	633.11	3,635.23	9.06	22.258	5.742	14.26	11.83
24 x 24 x 40.8	159.80	649.26	754.44	8,723.86	10.64	13.437	11.563	47.00	24.00
35.7	140.20	580.99	737.18	8,122.93	10.68	13.981	11.019	41.23	21.00
30.6	120.49	509.52	719.27	7,456.21	10.67	14.634	10.366	35.44	18.00
25.5	100.67	434.64	700.44	6,705.28	10.61	15.427	9.573	29.61	15.00
20.4	80.75	356.13	680.15	5,843.52	10.43	16.408	8.592	23.75	12.00
17.85	70.83	315.76	669.21	5,363.35	10.27	16.986	8.014	20.83	10.51
24 x 22 x 40.8	153.00	608.06	747.00	8,380.05	10.57	13.782	11.218	45.00	24.00
35.7	134.25	544.17	729.90	7,793.74	10.59	14.322	10.678	39.48	21.00
30.6	115.39	477.28	712.14	7,144.02	10.57	14.968	10.032	33.94	18.00
25.5	96.42	407.19	693.42	6,413.56	10.48	15.751	9.249	28.36	15.00



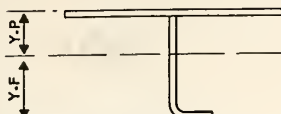
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

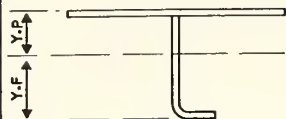
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STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 22 x 20.4	77.35	333.68	673.18	5,577.46	10.28	16.715	8.285	22.75	12.00
17.85	67.85	295.88	662.24	5,112.76	10.12	17.280	7.720	19.96	10.51
24 x 20 x 40.8	146.20	566.78	738.63	8,017.41	10.48	14.146	10.854	43.00	24.00
35.7	128.30	507.29	721.73	7,447.53	10.49	14.681	10.319	37.73	21.00
30.6	110.29	445.00	704.13	6,816.83	10.45	15.319	9.681	32.44	18.00
25.5	92.17	379.71	685.54	6,109.08	10.34	16.089	8.911	27.11	15.00
20.4	73.95	311.23	665.38	5,301.11	10.12	17.033	7.967	21.75	12.00
17.85	64.87	276.00	654.44	4,853.22	9.94	17.584	7.416	19.08	10.51
24 x 18 x 40.8	139.40	525.42	729.16	7,634.35	10.37	14.530	10.470	41.00	24.00
35.7	122.35	470.36	712.48	7,082.97	10.36	15.059	9.941	35.98	21.00
30.6	105.19	412.68	695.08	6,473.54	10.31	15.687	9.313	30.94	18.00
25.5	87.92	352.21	676.65	5,790.96	10.18	16.442	8.558	25.86	15.00
20.4	70.55	288.76	656.58	5,013.87	9.94	17.364	7.636	20.75	12.00
17.85	61.89	256.11	645.64	4,584.25	9.75	17.900	7.100	18.20	10.51
24 x 16 x 40.8	132.60	483.99	718.35	7,229.10	10.24	14.937	10.063	39.00	24.00
35.7	116.40	433.37	701.94	6,698.55	10.21	15.457	9.543	34.23	21.00
30.6	100.09	380.32	684.77	6,112.93	10.14	16.073	8.927	29.44	18.00
25.5	83.67	324.69	666.53	5,458.29	10.00	16.811	8.189	24.61	15.00
20.4	67.15	266.27	646.58	4,715.09	9.74	17.708	7.292	19.75	12.00
17.85	58.92	236.21	635.65	4,305.33	9.54	18.227	6.773	17.33	10.51
24 x 14 x 40.8	125.80	442.47	705.91	6,799.66	10.07	15.368	9.632	37.00	24.00
35.7	110.45	396.32	689.81	6,292.61	10.04	15.878	9.122	32.48	21.00
30.6	94.99	347.93	672.92	5,733.65	9.95	16.479	8.521	27.94	18.00
25.5	79.42	297.14	654.91	5,110.03	9.79	17.197	7.803	23.36	15.00
20.4	63.75	243.78	635.11	4,404.05	9.50	18.066	6.934	18.75	12.00
17.85	55.94	216.30	624.22	4,015.88	9.30	18.567	6.433	16.45	10.51
24 x 12 x 40.8	119.00	400.87	691.42	6,343.80	9.88	15.825	9.175	35.00	24.00
35.7	104.50	359.21	675.69	5,863.28	9.83	16.323	8.677	30.73	21.00
30.6	89.89	315.49	659.15	5,334.21	9.72	16.907	8.093	26.44	18.00
25.5	75.17	269.57	641.44	4,745.07	9.54	17.602	7.398	22.11	15.00
20.4	60.35	221.27	621.84	4,079.98	9.24	18.439	6.561	17.75	12.00
17.85	52.96	196.38	610.99	3,715.31	9.03	18.919	6.081	15.58	10.51
24 x 10 x 40.8	112.20	359.19	674.34	5,859.01	9.64	16.312	8.688	33.00	24.00
35.7	98.55	322.05	659.08	5,408.47	9.58	16.794	8.206	28.98	21.00
30.6	84.79	283.02	642.96	4,912.96	9.46	17.359	7.641	24.94	18.00
25.5	70.92	241.97	625.61	4,362.16	9.26	18.027	6.973	20.86	15.00
20.4	56.95	198.75	606.28	3,742.05	8.95	18.828	6.172	16.75	12.00
17.85	49.98	176.45	595.51	3,402.96	8.73	19.286	5.714	14.70	10.51
24 x 8 x 40.8	105.40	317.44	653.90	5,342.44	9.36	16.830	8.170	31.00	24.00
35.7	92.60	284.83	639.23	4,925.87	9.28	17.294	7.706	27.23	21.00
30.6	79.69	250.51	623.65	4,468.06	9.14	17.836	7.164	23.44	18.00
25.5	66.67	214.36	606.78	3,959.97	8.93	18.474	6.526	19.61	15.00
20.4	53.55	176.22	587.81	3,389.35	8.61	19.234	5.766	15.75	12.00
17.85	47.00	156.51	577.16	3,078.12	8.38	19.667	5.333	13.82	10.51
24 x 6 x 40.8	98.60	275.60	629.01	4,790.87	9.01	17.383	7.617	29.00	24.00
35.7	86.65	247.55	615.08	4,412.83	8.92	17.826	7.174	25.48	21.00
30.6	74.59	217.97	600.21	3,997.47	8.77	18.340	6.660	21.94	18.00
25.5	62.42	186.72	583.97	3,536.98	8.55	18.943	6.057	18.36	15.00
20.4	50.15	153.67	565.51	3,020.88	8.22	19.658	5.342	14.75	12.00
17.85	44.02	136.57	555.05	2,740.03	7.99	20.063	4.937	12.95	10.51
21 x 20 x 40.8	136.00	481.76	634.10	6,022.83	9.28	12.502	9.498	40.00	21.00
35.7	119.37	431.32	621.08	5,600.03	9.27	12.983	9.017	35.11	18.37
30.6	102.64	378.40	607.37	5,129.26	9.23	13.555	8.445	30.19	15.75
25.5	85.80	322.87	592.67	4,598.12	9.12	14.242	7.758	25.23	13.12
20.4	68.85	264.56	576.36	3,989.17	8.91	15.079	6.921	20.25	10.50
17.85	60.40	234.56	567.31	3,650.83	8.74	15.565	6.435	17.77	9.20

		PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE						30t	
STEEL		40.8 # PLATE WEIGHT							
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	445.45	626.13	5,726.11	9.18	12.855	9.145	38.00	21.00
35.7	113.42	398.87	613.24	5,316.86	9.16	13.330	8.670	33.36	18.37
30.6	97.54	349.99	599.64	4,861.96	9.10	13.892	8.108	28.69	15.75
25.5	81.55	298.67	585.00	4,349.94	8.98	14.564	7.436	23.98	13.12
20.4	65.45	244.79	568.68	3,764.79	8.74	15.380	6.620	19.25	10.50
17.85	57.43	217.06	559.59	3,440.68	8.57	15.851	6.149	16.89	9.20
21 x 16 x 40.8	122.40	409.05	616.98	5,411.41	9.05	13.229	8.771	36.00	21.00
35.7	107.47	366.35	604.25	5,017.61	9.02	13.696	8.304	31.61	18.37
30.6	92.44	321.53	590.78	4,580.64	8.95	14.246	7.754	27.19	15.75
25.5	77.30	274.46	576.22	4,089.99	8.81	14.902	7.098	22.73	13.12
20.4	62.05	225.01	559.90	3,531.12	8.55	15.693	6.307	18.25	10.50
17.85	54.45	199.55	550.76	3,222.52	8.37	16.149	5.851	16.01	9.20
21 x 14 x 40.8	115.60	372.57	606.36	5,077.05	8.91	13.627	8.373	34.00	21.00
35.7	101.52	333.78	593.83	4,700.87	8.86	14.084	7.916	29.86	18.37
30.6	87.34	293.03	580.52	4,284.17	8.77	14.620	7.380	25.69	15.75
25.5	73.05	250.22	566.06	3,817.43	8.61	15.256	6.744	21.48	13.12
20.4	58.65	205.21	549.77	3,287.55	8.34	16.020	5.980	17.25	10.50
17.85	51.47	182.03	540.59	2,995.89	8.15	16.458	5.542	15.14	9.20
21 x 12 x 40.8	108.80	336.01	593.83	4,721.13	8.73	14.050	7.950	32.00	21.00
35.7	95.57	301.15	581.60	4,365.06	8.67	14.495	7.505	28.11	18.37
30.6	82.24	264.50	568.50	3,971.29	8.56	15.014	6.986	24.19	15.75
25.5	68.80	225.96	554.19	3,531.30	8.38	15.628	6.372	20.23	13.12
20.4	55.25	185.41	537.96	3,033.45	8.10	16.361	5.639	16.25	10.50
17.85	48.49	164.50	528.75	2,760.30	7.90	16.780	5.220	14.26	9.20
21 x 10 x 40.8	102.00	299.37	579.03	4,341.50	8.51	14.502	7.498	30.00	21.00
35.7	89.62	268.46	567.06	4,008.40	8.43	14.931	7.069	26.36	18.37
30.6	77.14	235.93	554.22	3,640.60	8.31	15.431	6.569	22.69	15.75
25.5	64.55	201.67	540.13	3,230.57	8.12	16.019	5.981	18.98	13.12
20.4	51.85	165.59	523.99	2,768.13	7.82	16.717	5.283	15.25	10.50
17.85	45.51	146.97	514.76	2,515.19	7.61	17.114	4.886	13.39	9.20
21 x 8 x 40.8	95.20	262.64	561.03	3,935.70	8.24	14.985	7.015	28.00	21.00
35.7	83.67	235.71	549.47	3,628.89	8.15	15.396	6.604	24.61	18.37
30.6	72.04	207.31	537.00	3,290.54	8.02	15.872	6.128	21.19	15.75
25.5	60.30	177.36	523.19	2,914.09	7.81	16.430	5.570	17.73	13.12
20.4	48.45	145.75	507.22	2,490.81	7.50	17.089	4.911	14.25	10.50
17.85	42.53	129.42	498.02	2,259.98	7.29	17.462	4.538	12.51	9.20
21 x 6 x 40.8	88.40	225.83	538.79	3,500.92	7.91	15.502	6.498	26.00	21.00
35.7	77.72	202.90	527.78	3,224.25	7.81	15.891	6.109	22.86	18.37
30.6	66.94	178.66	515.80	2,919.34	7.67	16.340	5.660	19.69	15.75
25.5	56.05	153.03	502.41	2,580.59	7.45	16.864	5.136	16.48	13.12
20.4	45.05	125.91	486.73	2,200.67	7.13	17.479	4.521	13.25	10.50
17.85	39.56	111.87	477.60	1,994.03	6.92	17.825	4.175	11.63	9.20
18 x 18 x 40.8	119.00	369.00	525.65	4,119.30	7.96	11.163	7.837	35.00	18.00
35.7	104.50	330.59	516.09	3,828.66	7.94	11.581	7.419	30.73	15.75
30.6	89.89	290.17	505.81	3,503.46	7.88	12.074	6.926	26.44	13.50
25.5	75.17	247.67	494.49	3,135.35	7.76	12.659	6.341	22.11	11.25
20.4	60.35	202.97	481.47	2,712.83	7.54	13.366	5.634	17.75	9.00
15.3	45.42	155.98	465.30	2,219.58	7.15	14.230	4.770	13.36	6.75
18 x 16 x 40.8	112.20	337.72	518.07	3,884.50	7.85	11.502	7.498	33.00	18.00
35.7	98.55	302.62	508.58	3,604.77	7.82	11.912	7.088	28.98	15.75
30.6	84.79	265.67	498.34	3,292.49	7.74	12.393	6.607	24.94	13.50
25.5	70.92	226.81	487.00	2,940.06	7.60	12.963	6.037	20.86	11.25
20.4	56.95	185.92	473.88	2,537.11	7.37	13.646	5.354	16.75	9.00
15.3	42.87	142.92	457.45	2,069.07	6.97	14.477	4.523	12.61	6.75
18 x 14 x 40.8	105.40	306.36	509.20	3,634.31	7.72	11.863	7.137	31.00	18.00
35.7	92.60	274.59	499.80	3,367.20	7.67	12.263	6.737	27.23	15.75



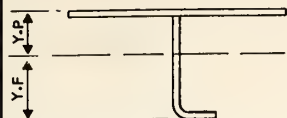
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

40.8 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 30.6	79.69	241.13	489.61	3,069.69	7.58	12.730	6.270	23.44	13.50
25.5	66.67	205.92	478.27	2,734.94	7.42	13.282	5.718	19.61	11.25
20.4	53.55	168.86	465.06	2,353.71	7.17	13.939	5.061	15.75	9.00
15.3	40.32	129.86	448.37	1,913.18	6.76	14.733	4.267	11.86	6.75
18 x 12 x 40.8	98.60	274.92	498.68	3,367.17	7.55	12.248	6.752	29.00	18.00
35.7	86.65	246.49	489.41	3,114.65	7.49	12.636	6.364	25.48	15.75
30.6	74.59	216.55	479.30	2,834.03	7.39	13.087	5.913	21.94	13.50
25.5	62.42	185.01	467.98	2,519.22	7.22	13.617	5.383	18.36	11.25
20.4	50.15	151.78	454.68	2,162.12	6.95	14.245	4.755	14.75	9.00
15.3	37.77	116.79	437.72	1,751.60	6.53	14.998	4.002	11.11	6.75
18 x 10 x 40.8	91.80	243.39	486.01	3,081.29	7.35	12.660	6.340	27.00	18.00
35.7	80.70	218.34	476.91	2,845.66	7.28	13.033	5.967	23.73	15.75
30.6	69.49	191.93	466.93	2,584.35	7.16	13.465	5.535	20.44	13.50
25.5	58.17	164.07	455.66	2,292.05	6.98	13.970	5.030	17.11	11.25
20.4	46.75	134.69	442.30	1,961.77	6.70	14.565	4.435	13.75	9.00
15.3	35.22	103.71	425.08	1,584.01	6.26	15.274	3.726	10.36	6.75
18 x 8 x 40.8	85.00	211.77	470.46	2,774.63	7.10	13.102	5.898	25.00	18.00
35.7	74.75	190.13	461.60	2,558.57	7.02	13.457	5.543	21.98	15.75
30.6	64.39	167.26	451.81	2,319.37	6.88	13.866	5.134	18.94	13.50
25.5	53.92	143.11	440.65	2,052.50	6.69	14.342	4.658	15.86	11.25
20.4	43.35	117.59	427.27	1,752.04	6.40	14.899	4.101	12.75	9.00
15.3	32.67	90.63	409.82	1,410.08	5.97	15.559	3.441	9.61	6.75
18 x 6 x 40.8	78.20	180.06	450.90	2,444.85	6.79	13.578	5.422	23.00	18.00
35.7	68.80	161.85	442.39	2,251.48	6.69	13.911	5.089	20.23	15.75
30.6	59.29	142.56	432.90	2,037.63	6.55	14.293	4.707	17.44	13.50
25.5	49.67	122.12	421.95	1,799.53	6.35	14.735	4.265	14.61	11.25
20.4	39.95	100.47	408.65	1,532.28	6.06	15.250	3.750	11.75	9.00
15.3	30.12	77.54	391.03	1,229.43	5.62	15.856	3.144	8.86	6.75



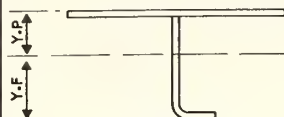
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,029.04	1,199.95	17,242.34	13.34	16.756	14.369	59.00	30.00
35.7	175.90	918.72	1,172.05	16,029.95	13.37	17.448	13.677	51.73	26.25
30.6	151.09	803.87	1,143.24	14,690.76	13.35	18.275	12.850	44.44	22.50
25.5	126.17	684.21	1,113.12	13,189.08	13.26	19.276	11.849	37.11	18.75
20.4	101.15	559.40	1,080.90	11,473.43	13.02	20.510	10.615	29.75	15.00
17.85	88.70	495.46	1,063.67	10,520.67	12.82	21.234	9.891	26.09	13.14
30 x 27 x 40.8	190.40	950.75	1,185.84	16,424.02	13.22	17.275	13.850	56.00	30.00
35.7	166.97	848.91	1,158.27	15,247.30	13.23	17.961	13.164	49.11	26.25
30.6	143.44	742.88	1,129.74	13,949.49	13.19	18.778	12.347	42.19	22.50
25.5	119.80	632.39	1,099.85	12,497.45	13.07	19.762	11.363	35.23	18.75
20.4	96.05	517.12	1,067.76	10,843.72	12.80	20.969	10.156	28.25	15.00
17.85	84.23	458.06	1,050.53	9,928.18	12.58	21.674	9.451	24.77	13.14
30 x 24 x 40.8	180.20	872.31	1,169.58	15,551.74	13.08	17.828	13.297	53.00	30.00
35.7	158.05	778.99	1,142.39	14,415.99	13.07	18.506	12.619	46.48	26.25
30.6	135.79	681.82	1,114.21	13,165.41	13.00	19.309	11.816	39.94	22.50
25.5	113.42	580.53	1,084.59	11,769.45	12.85	20.274	10.851	33.36	18.75
20.4	90.95	474.82	1,052.67	10,184.82	12.55	21.450	9.675	26.75	15.00
17.85	79.76	420.65	1,035.45	9,310.34	12.31	22.133	8.992	23.46	13.14
30 x 21 x 40.8	170.00	793.73	1,150.66	14,619.97	12.89	18.419	12.706	50.00	30.00
35.7	149.12	708.98	1,123.93	13,531.35	12.86	19.086	12.039	43.86	26.25
30.6	128.14	620.70	1,096.16	12,334.68	12.77	19.872	11.253	37.69	22.50
25.5	107.05	528.63	1,066.88	11,002.13	12.59	20.813	10.312	31.48	18.75
20.4	85.85	432.50	1,035.17	9,494.64	12.26	21.953	9.172	25.25	15.00
17.85	75.30	383.21	1,017.98	8,665.48	12.01	22.613	8.512	22.15	13.14
30 x 18 x 40.8	159.80	715.01	1,128.34	13,622.40	12.66	19.052	12.073	47.00	30.00
35.7	140.20	638.86	1,102.17	12,588.07	12.61	19.704	11.421	41.23	26.25
30.6	120.49	559.50	1,074.91	11,453.02	12.49	20.470	10.655	35.44	22.50
25.5	100.67	476.68	1,046.05	10,192.23	12.28	21.382	9.743	29.61	18.75
20.4	80.75	390.16	1,014.63	8,770.91	11.92	22.481	8.644	23.75	15.00
17.85	70.83	345.77	997.50	7,991.80	11.66	23.113	8.012	20.83	13.14
30 x 15 x 40.8	149.60	636.14	1,101.64	12,551.82	12.38	19.731	11.394	44.00	30.00
35.7	131.27	568.64	1,076.16	11,580.12	12.30	20.364	10.761	38.61	26.25
30.6	112.84	498.23	1,049.54	10,515.60	12.16	21.106	10.019	33.19	22.50
25.5	94.30	424.70	1,021.22	9,336.09	11.92	21.983	9.142	27.73	18.75
20.4	75.65	347.79	990.18	8,011.11	11.54	23.034	8.091	22.25	15.00
17.85	66.36	308.31	973.15	7,287.30	11.26	23.637	7.488	19.52	13.14
30 x 12 x 40.8	139.40	557.13	1,069.10	11,399.89	12.02	20.462	10.663	41.00	30.00
35.7	122.35	498.32	1,044.52	10,500.60	11.92	21.072	10.053	35.98	26.25
30.6	105.19	436.90	1,018.71	9,516.94	11.75	21.783	9.342	30.94	22.50
25.5	87.92	372.67	991.10	8,429.64	11.49	22.620	8.505	25.86	18.75
20.4	70.55	305.40	960.60	7,212.49	11.08	23.617	7.508	20.75	15.00
17.85	61.89	270.83	943.73	6,549.84	10.80	24.185	6.940	18.20	13.14
30 x 9 x 40.8	129.20	477.97	1,028.60	10,156.98	11.56	21.250	9.875	38.00	30.00
35.7	113.42	427.90	1,005.18	9,341.62	11.45	21.832	9.293	33.36	26.25
30.6	97.54	375.50	980.45	8,450.86	11.26	22.506	8.619	28.69	22.50
25.5	81.55	320.60	953.81	7,468.31	10.98	23.295	7.830	23.98	18.75
20.4	65.45	262.98	924.98	6,371.97	10.55	24.229	6.896	19.25	15.00
17.85	57.43	233.33	907.46	5,777.04	10.26	24.759	6.366	16.89	13.14
30 x 6 x 40.8	119.00	398.66	976.79	8,811.87	10.99	22.104	9.021	35.00	30.00
35.7	104.50	357.37	954.96	8,094.06	10.86	22.649	8.476	30.73	26.25
30.6	89.89	314.03	931.72	7,310.27	10.66	23.279	7.846	26.44	22.50
25.5	75.17	268.48	906.43	6,446.96	10.36	24.013	7.112	22.11	18.75
20.4	60.35	220.55	877.82	5,486.19	9.92	24.875	6.250	17.75	15.00
17.85	52.96	195.82	861.65	4,966.30	9.63	25.361	5.764	15.58	13.14
27 x 27 x 40.8	180.20	838.22	1,051.97	13,120.42	12.01	15.653	12.472	53.00	27.00
35.7	158.05	748.47	1,029.47	12,188.80	12.01	16.285	11.840	46.48	23.62



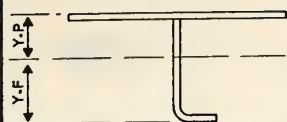
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	654.93	1,006.01	11,156.71	11.97	17.035	11.090	39.94	20.25
25.5	113.42	557.40	981.17	9,997.34	11.84	17.936	10.189	33.36	16.87
20.4	90.95	455.61	954.11	8,672.67	11.58	19.035	9.090	26.75	13.50
17.85	79.76	403.47	939.35	7,938.06	11.37	19.674	8.451	23.46	11.83
27 x 24 x 40.8	170.00	767.35	1,037.85	12,407.85	11.88	16.170	11.955	50.00	27.00
35.7	149.12	685.28	1,015.60	11,508.22	11.86	16.794	11.331	43.86	23.62
30.6	128.14	599.73	992.36	10,513.54	11.79	17.531	10.594	37.69	20.25
25.5	107.05	510.50	967.66	9,399.21	11.63	18.412	9.713	31.48	16.87
20.4	85.85	417.37	940.63	8,130.76	11.34	19.481	8.644	25.25	13.50
17.85	75.30	369.65	925.80	7,429.80	11.12	20.100	8.025	22.15	11.83
27 x 21 x 40.8	159.80	696.34	1,021.31	11,664.97	11.71	16.723	11.402	47.00	27.00
35.7	140.20	621.90	999.38	10,782.54	11.67	17.336	10.789	41.23	23.62
30.6	120.49	544.45	976.40	9,830.93	11.57	18.056	10.069	35.44	20.25
25.5	100.67	463.57	951.90	8,767.89	11.39	18.914	9.211	29.61	16.87
20.4	80.75	379.10	924.91	7,562.49	11.07	19.949	8.176	23.75	13.50
17.85	70.83	335.80	910.03	6,898.82	10.83	20.544	7.581	20.83	11.83
27 x 18 x 40.8	149.60	625.18	1,001.68	10,826.26	11.49	17.317	10.808	44.00	27.00
35.7	131.27	558.58	980.14	10,007.09	11.43	17.915	10.210	38.61	23.62
30.6	112.84	489.11	957.50	9,105.15	11.31	18.616	9.509	33.19	20.25
25.5	94.30	416.59	933.24	8,100.53	11.11	19.445	8.680	27.73	16.87
20.4	75.65	340.81	906.35	6,965.91	10.76	20.439	7.686	22.25	13.50
17.85	66.36	301.95	891.44	6,343.55	10.51	21.009	7.116	19.52	11.83
27 x 15 x 40.8	139.40	553.87	978.00	9,945.34	11.22	17.956	10.169	41.00	27.00
35.7	123.35	495.08	956.96	9,176.60	11.14	18.536	9.589	35.98	23.62
30.6	105.19	433.70	934.76	8,331.96	11.00	19.212	8.913	30.94	20.25
25.5	87.92	369.56	910.83	7,393.95	10.76	20.007	8.118	25.86	16.87
20.4	70.55	302.49	884.11	6,338.84	10.39	20.955	7.170	20.75	13.50
17.85	61.89	268.07	869.18	5,762.31	10.13	21.495	6.630	18.20	11.83
27 x 12 x 40.8	129.20	482.42	948.87	8,994.85	10.88	18.645	9.480	38.00	27.00
35.7	113.42	431.47	928.49	8,284.98	10.78	19.202	8.923	33.36	23.62
30.6	97.54	378.21	906.87	7,506.57	10.61	19.848	8.277	28.69	20.25
25.5	81.55	322.50	883.41	6,644.59	10.36	20.603	7.522	23.98	16.87
20.4	65.45	264.16	856.96	5,678.88	9.96	21.498	6.627	19.25	13.50
17.85	57.43	234.18	842.05	5,153.20	9.69	22.005	6.120	16.89	11.83
27 x 9 x 40.8	119.00	410.81	912.16	7,966.21	10.45	19.392	8.753	35.00	27.00
35.7	104.50	367.75	892.67	7,325.22	10.33	19.919	8.206	30.73	23.62
30.6	89.89	322.66	871.85	6,623.50	10.14	20.528	7.597	26.44	20.25
25.5	75.17	275.39	849.07	5,848.45	9.87	21.237	6.888	22.11	16.87
20.4	60.35	225.79	823.08	4,983.38	9.46	22.070	6.055	17.75	13.50
17.85	52.96	200.28	808.27	4,514.20	9.18	22.540	5.585	15.58	11.83
27 x 6 x 40.8	108.80	339.05	864.48	6,849.36	9.90	20.202	7.923	32.00	27.00
35.7	95.57	303.93	846.25	6,289.19	9.76	20.693	7.432	28.11	23.62
30.6	82.24	267.03	826.60	5,676.48	9.56	21.258	6.867	24.19	20.25
25.5	68.80	228.24	804.82	5,001.00	9.27	21.911	6.214	20.23	16.87
20.4	55.25	187.41	779.61	4,249.38	8.85	22.674	5.451	16.25	13.50
17.85	48.49	166.35	765.05	3,843.03	8.58	23.102	5.023	14.26	11.83
24 x 24 x 40.8	159.80	665.86	908.70	9,655.01	10.66	14.500	10.625	47.00	24.00
35.7	140.20	594.72	890.92	8,960.73	10.64	15.067	10.058	41.23	21.00
30.6	120.49	520.47	872.14	8,189.57	10.56	15.735	9.390	35.44	18.00
25.5	100.67	442.97	851.90	7,322.25	10.41	16.530	8.595	29.61	15.00
20.4	80.75	362.04	829.28	6,331.97	10.13	17.480	7.636	23.75	12.00
17.85	70.83	320.58	816.62	5,783.93	9.92	18.042	7.083	20.83	10.51
24 x 22 x 40.8	153.00	623.65	899.48	9,253.39	10.56	14.838	10.287	45.00	24.00
35.7	134.25	557.07	881.81	8,577.61	10.52	15.398	9.727	39.48	21.00
30.6	115.39	487.58	863.12	7,828.23	10.44	16.055	9.070	33.94	18.00
25.5	96.42	415.03	842.91	6,987.26	10.27	16.836	8.289	28.36	15.00



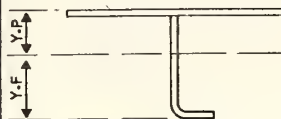
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

45.9 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		r	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ⁴
24 x 22 x 20.4	77.35	339.26	820.22	6,029.85	9.97	17.773	7.352	22.75	12.00
17.85	67.85	300.43	807.47	5,501.43	9.75	18.312	6.813	19.96	10.51
24 x 20 x 40.8	146.20	581.36	889.13	8,831.94	10.45	15.192	9.933	43.00	24.00
35.7	128.30	519.37	871.60	8,176.77	10.39	15.744	9.381	37.73	21.00
30.6	110.29	454.65	853.01	7,451.49	10.29	16.389	8.736	32.44	18.00
25.5	92.17	387.07	832.84	6,639.40	10.10	17.153	7.972	27.11	15.00
20.4	73.95	316.47	810.09	5,717.61	9.79	18.067	7.058	21.75	12.00
17.85	64.87	280.27	797.26	5,210.25	9.56	18.590	6.535	19.08	10.51
24 x 18 x 40.8	139.40	539.01	877.43	8,389.14	10.31	15.564	9.561	41.00	24.00
35.7	122.35	481.62	860.07	7,756.97	10.24	16.106	9.019	35.98	21.00
30.6	105.19	421.69	841.60	7,058.35	10.12	16.738	8.387	30.94	18.00
25.5	87.92	359.09	821.49	6,277.91	9.92	17.483	7.642	25.86	15.00
20.4	70.55	293.66	798.69	5,394.74	9.59	18.371	6.754	20.75	12.00
17.85	61.89	260.11	785.77	4,909.99	9.35	18.876	6.249	18.20	10.51
24 x 16 x 40.8	132.60	496.59	864.09	7,923.33	10.15	15.955	9.170	39.00	24.00
35.7	116.40	443.82	846.94	7,316.81	10.07	16.486	8.639	34.23	21.00
30.6	100.09	388.70	828.62	6,647.71	9.93	17.102	8.023	29.44	18.00
25.5	83.67	331.09	808.60	5,901.98	9.71	17.826	7.299	24.61	15.00
20.4	67.15	270.85	785.77	5,060.67	9.37	18.685	6.440	19.75	12.00
17.85	58.92	239.94	772.76	4,600.21	9.12	19.172	5.953	17.33	10.51
24 x 14 x 40.8	125.80	454.10	848.76	7,432.68	9.96	16.368	8.757	37.00	24.00
35.7	110.45	405.98	831.85	6,854.79	9.87	16.885	8.240	32.48	21.00
30.6	94.99	355.68	813.73	6,218.38	9.71	17.483	7.642	27.94	18.00
25.5	79.42	303.07	793.83	5,510.72	9.48	18.183	6.942	23.36	15.00
20.4	63.75	248.02	770.99	4,714.83	9.12	19.010	6.115	18.75	12.00
17.85	55.94	219.77	757.90	4,280.45	8.87	19.477	5.648	16.45	10.51
24 x 12 x 40.8	119.00	411.54	830.94	6,915.12	9.74	16.803	8.322	35.00	24.00
35.7	104.50	368.09	814.34	6,369.23	9.63	17.304	7.821	30.73	21.00
30.6	89.89	322.62	796.48	5,769.04	9.47	17.882	7.243	26.44	18.00
25.5	75.17	275.03	776.73	5,103.18	9.22	18.555	6.570	22.11	15.00
20.4	60.35	225.19	753.93	4,356.56	8.84	19.346	5.779	17.75	12.00
17.85	52.96	199.58	740.77	3,950.23	8.59	19.792	5.333	15.58	10.51
24 x 10 x 40.8	112.20	368.92	809.97	6,368.40	9.47	17.262	7.863	33.00	24.00
35.7	98.55	330.14	793.76	5,858.29	9.36	17.745	7.380	28.98	21.00
30.6	84.79	289.53	776.23	5,298.27	9.18	18.299	6.826	24.94	18.00
25.5	70.92	246.97	756.73	4,678.31	8.92	18.943	6.182	20.86	15.00
20.4	56.95	202.34	734.00	3,985.20	8.54	19.696	5.429	16.75	12.00
17.85	49.98	179.39	720.80	3,609.02	8.28	20.118	5.007	14.70	10.51
24 x 8 x 40.8	105.40	326.22	784.94	5,789.98	9.16	17.749	7.376	31.00	24.00
35.7	92.60	292.15	769.25	5,319.91	9.03	18.209	6.916	27.23	21.00
30.6	79.69	256.41	752.15	4,804.50	8.85	18.737	6.388	23.44	18.00
25.5	66.67	218.89	732.99	4,234.99	8.58	19.347	5.778	19.61	15.00
20.4	53.55	179.48	710.44	3,600.00	8.19	20.058	5.067	15.75	12.00
17.85	47.00	159.19	697.23	3,256.27	7.93	20.455	4.670	13.82	10.51
24 x 6 x 40.8	98.60	283.45	754.55	5,177.00	8.79	18.264	6.861	29.00	24.00
35.7	86.65	254.12	739.53	4,751.84	8.66	18.700	6.425	25.48	21.00
30.6	74.59	223.26	723.04	4,286.00	8.46	19.197	5.928	21.94	18.00
25.5	62.42	190.80	704.37	3,772.00	8.18	19.770	5.355	18.36	15.00
20.4	50.15	156.61	682.14	3,200.19	7.79	20.434	4.691	14.75	12.00
17.85	44.02	138.99	668.99	2,891.37	7.54	20.803	4.322	12.95	10.51
21 x 20 x 40.8	136.00	493.74	765.50	6,640.79	9.23	13.450	8.675	40.00	21.00
35.7	119.37	441.20	751.80	6,151.49	9.18	13.943	8.182	35.11	18.37
30.6	102.64	386.27	737.02	5,607.39	9.07	14.517	7.608	30.19	15.75
25.5	85.80	328.84	720.64	4,995.92	8.89	15.192	6.933	25.23	13.12
20.4	68.85	268.81	701.66	4,300.05	8.60	15.997	6.128	20.25	10.50
17.85	60.40	238.03	690.66	3,916.62	8.38	16.454	5.671	17.77	9.20



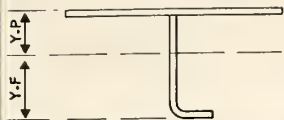
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

45.9 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	456.56	755.50	6,296.39	9.11	13.791	8.334	38.00	21.00
35.7	113.42	408.04	741.87	5,824.37	9.04	14.274	7.851	33.36	18.37
30.6	97.54	357.30	727.12	5,300.59	8.92	14.835	7.290	28.69	15.75
25.5	81.55	304.24	710.70	4,713.53	8.72	15.493	6.632	23.98	13.12
20.4	65.45	248.76	691.55	4,047.74	8.41	16.272	5.853	19.25	10.50
17.85	57.43	220.30	680.41	3,682.02	8.19	16.714	5.411	16.89	9.20
21 x 16 x 40.8	122.40	419.31	744.03	5,933.37	8.96	14.150	7.975	36.00	21.00
35.7	107.47	374.83	730.49	5,480.79	8.88	14.622	7.503	31.61	18.37
30.6	92.44	328.30	715.79	4,979.65	8.74	15.168	6.957	27.19	15.75
25.5	77.30	279.62	699.34	4,419.51	8.53	15.805	6.320	22.73	13.12
20.4	62.05	228.69	680.03	3,786.45	8.21	16.557	5.568	18.25	10.50
17.85	54.45	202.56	668.74	3,439.81	7.98	16.981	5.144	16.01	9.20
21 x 14 x 40.8	115.60	381.98	730.75	5,550.18	8.78	14.530	7.595	34.00	21.00
35.7	101.52	341.57	717.34	5,119.48	8.69	14.988	7.137	29.86	18.37
30.6	87.34	299.26	702.70	4,643.59	8.54	15.517	6.608	25.69	15.75
25.5	73.05	254.98	686.24	4,113.12	8.32	16.131	5.994	21.48	13.12
20.4	58.65	208.62	666.78	3,515.70	7.98	16.852	5.273	17.25	10.50
17.85	51.47	184.82	655.33	3,189.60	7.75	17.258	4.867	15.14	9.20
21 x 12 x 40.8	108.80	344.59	715.19	5,145.08	8.58	14.931	7.194	32.00	21.00
35.7	95.57	308.26	701.94	4,739.04	8.47	15.374	6.751	28.11	18.37
30.6	82.24	270.19	687.42	4,291.30	8.31	15.882	6.243	24.19	15.75
25.5	68.80	230.32	670.97	3,793.56	8.07	16.471	5.654	20.23	13.12
20.4	55.25	188.53	651.38	3,234.95	7.73	17.159	4.966	16.25	10.50
17.85	48.49	167.07	639.78	2,931.00	7.49	17.544	4.581	14.26	9.20
21 x 10 x 40.8	102.00	307.13	696.70	4,716.15	8.33	15.356	6.769	30.00	21.00
35.7	89.62	274.90	683.69	4,337.90	8.21	15.780	6.345	26.36	18.37
30.6	77.14	241.09	669.32	3,921.59	8.04	16.266	5.859	22.69	15.75
25.5	64.55	205.63	652.94	3,459.98	7.80	16.826	5.299	18.98	13.12
20.4	51.85	168.43	633.25	2,943.65	7.44	17.477	4.648	15.25	10.50
17.85	45.51	149.31	621.51	2,663.57	7.20	17.839	4.286	13.39	9.20
21 x 8 x 40.8	95.20	269.59	674.38	4,261.21	8.04	15.806	6.319	28.00	21.00
35.7	83.67	241.49	661.69	3,914.32	7.91	16.209	5.916	24.61	18.37
30.6	72.04	211.96	647.57	3,533.13	7.73	16.669	5.456	21.19	15.75
25.5	60.30	180.93	631.32	3,111.42	7.48	17.197	4.928	17.73	13.12
20.4	48.45	148.33	611.60	2,641.19	7.11	17.807	4.318	14.25	10.50
17.85	42.53	131.54	599.75	2,386.85	6.88	18.145	3.980	12.51	9.20
21 x 6 x 40.8	88.40	231.98	646.88	3,777.83	7.69	16.285	5.840	26.00	21.00
35.7	77.72	208.02	634.66	3,466.36	7.55	16.663	5.462	22.86	18.37
30.6	66.94	182.79	620.92	3,124.46	7.36	17.093	5.032	19.69	15.75
25.5	56.05	156.21	604.94	2,746.86	7.10	17.584	4.541	16.48	13.12
20.4	45.05	128.21	585.30	2,326.92	6.74	18.149	3.976	13.25	10.50
17.85	39.56	113.77	573.39	2,100.36	6.51	18.462	3.663	11.63	9.20
18 x 18 x 40.8	119.00	377.91	635.83	4,533.16	7.88	11.996	7.129	35.00	18.00
35.7	104.50	337.91	625.46	4,195.75	7.82	12.417	6.708	30.73	15.75
30.6	89.89	296.00	613.97	3,819.53	7.70	12.904	6.221	26.44	13.50
25.5	75.17	252.10	600.79	3,396.24	7.52	13.472	5.653	22.11	11.25
20.4	60.35	206.13	584.85	2,914.93	7.23	14.141	4.984	17.75	9.00
15.3	45.42	158.04	563.78	2,360.74	6.78	14.938	4.187	13.36	6.75
18 x 16 x 40.8	112.20	345.89	626.15	4,261.25	7.75	12.320	6.805	33.00	18.00
35.7	98.55	309.34	615.78	3,937.94	7.67	12.730	6.395	28.98	15.75
30.6	84.79	271.03	604.23	3,578.38	7.54	13.203	5.922	24.94	13.50
25.5	70.92	230.89	590.91	3,175.13	7.35	13.752	5.373	20.86	11.25
20.4	56.95	188.85	574.70	2,718.42	7.05	14.395	4.730	16.75	9.00
15.3	42.87	144.83	553.14	2,195.13	6.59	15.156	3.969	12.61	6.75
18 x 14 x 40.8	105.40	313.81	614.86	3,973.58	7.59	12.662	6.463	31.00	18.00
35.7	92.60	280.73	604.50	3,666.30	7.50	13.060	6.065	27.23	15.75



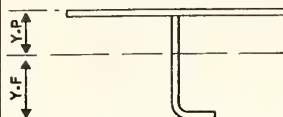
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		r	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 30.6	79.69	246.03	592.90	3,325.45	7.36	13.516	5.609	23.44	13.50
25.5	66.67	209.66	579.45	2,944.42	7.15	14.044	5.081	19.61	11.25
20.4	53.55	171.55	562.96	2,514.60	6.84	14.658	4.467	15.75	9.00
15.3	40.32	131.62	540.87	2,024.54	6.38	15.382	3.743	11.86	6.75
18 x 12 x 40.8	98.60	281.65	601.50	3,668.73	7.40	13.026	6.099	29.00	18.00
35.7	86.65	252.06	591.18	3,379.67	7.30	13.408	5.717	25.48	15.75
30.6	74.59	221.00	579.56	3,059.85	7.15	13.845	5.280	21.94	13.50
25.5	62.42	188.42	565.98	2,703.47	6.93	14.348	4.777	18.36	11.25
20.4	50.15	154.24	549.22	2,303.04	6.61	14.932	4.193	14.75	9.00
15.3	37.77	118.40	526.58	1,848.73	6.14	15.614	3.511	11.11	6.75
18 x 10 x 40.8	91.80	249.42	585.47	3,345.11	7.18	13.411	5.714	27.00	18.00
35.7	80.70	223.34	575.23	3,076.79	7.06	13.776	5.349	23.73	15.75
30.6	69.49	195.94	563.61	2,780.62	6.90	14.191	4.934	20.44	13.50
25.5	58.17	167.15	549.93	2,451.58	6.67	14.667	4.458	17.11	11.25
20.4	46.75	136.92	532.90	2,083.30	6.35	15.216	3.909	13.75	9.00
15.3	35.22	105.18	509.72	1,667.47	5.88	15.854	3.271	10.36	6.75
18 x 8 x 40.8	85.00	217.12	565.86	3,000.94	6.90	13.822	5.303	25.00	18.00
35.7	74.75	194.57	555.76	2,756.23	6.78	14.166	4.959	21.98	15.75
30.6	64.39	170.84	544.21	2,486.66	6.61	14.556	4.569	18.94	13.50
25.5	53.92	145.86	530.49	2,187.99	6.38	15.001	4.124	15.86	11.25
20.4	43.35	119.59	513.23	1,854.89	6.05	15.511	3.614	12.75	9.00
15.3	32.67	91.95	489.53	1,480.48	5.58	16.101	3.024	9.61	6.75
18 x 6 x 40.8	78.20	184.74	541.32	2,634.20	6.57	14.259	4.866	23.00	18.00
35.7	68.80	165.75	531.49	2,416.39	6.44	14.579	4.546	20.23	15.75
30.6	59.29	145.70	520.11	2,176.78	6.27	14.940	4.185	17.44	13.50
25.5	49.67	124.55	506.43	1,911.87	6.03	15.350	3.775	14.61	11.25
20.4	39.95	102.24	489.04	1,617.29	5.70	15.818	3.307	11.75	9.00
15.3	30.12	78.72	464.92	1,287.51	5.24	16.356	2.769	8.86	6.75



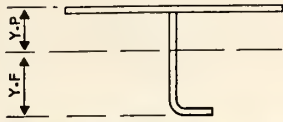
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,051.78	1,419.00	18,876.54	13.35	17.947	13.303	59.00	30.00
35.7	175.90	937.49	1,390.38	17,498.07	13.32	18.665	12.585	51.73	26.25
30.6	151.09	818.83	1,360.40	15,973.73	13.23	19.508	11.742	44.44	22.50
25.5	126.17	695.56	1,328.41	14,266.41	13.03	20.511	10.739	37.11	18.75
20.4	101.15	567.44	1,293.14	12,324.43	12.68	21.719	9.531	29.75	15.00
17.85	88.70	502.00	1,273.67	11,252.45	12.42	22.415	8.835	26.09	13.14
30 x 27 x 40.8	190.40	971.84	1,401.95	17,936.43	13.20	18.456	12.794	56.00	30.00
35.7	166.97	866.34	1,373.58	16,601.93	13.15	19.163	12.087	49.11	26.25
30.6	143.44	756.78	1,343.78	15,129.15	13.03	19.991	11.259	42.19	22.50
25.5	119.80	642.96	1,311.89	13,483.95	12.81	20.972	10.278	35.23	18.75
20.4	96.05	524.61	1,276.57	11,619.19	12.44	22.148	9.102	28.25	15.00
17.85	84.23	464.16	1,256.96	10,593.18	12.16	22.822	8.428	24.77	13.14
30 x 24 x 40.8	180.20	891.78	1,382.33	16,939.86	13.02	18.995	12.255	53.00	30.00
35.7	158.05	795.10	1,354.26	15,655.41	12.95	19.690	11.560	46.48	26.25
30.6	135.79	694.68	1,324.70	14,240.80	12.81	20.500	10.750	39.94	22.50
25.5	113.42	590.31	1,292.94	12,664.93	12.56	21.455	9.795	33.36	18.75
20.4	90.95	481.77	1,257.57	10,885.22	12.16	22.594	8.656	26.75	15.00
17.85	79.76	426.30	1,237.83	9,909.27	11.87	23.245	8.005	23.46	13.14
30 x 21 x 40.8	170.00	811.60	1,359.52	15,881.58	12.80	19.568	11.682	50.00	30.00
35.7	149.12	723.77	1,331.81	14,654.13	12.71	20.247	11.003	43.86	26.25
30.6	128.14	632.52	1,302.55	13,305.18	12.54	21.035	10.215	37.69	22.50
25.5	107.05	537.64	1,270.97	11,806.72	12.27	21.960	9.290	31.48	18.75
20.4	85.85	438.91	1,235.58	10,120.71	11.85	23.059	8.191	25.25	15.00
17.85	75.30	388.44	1,215.72	9,199.33	11.54	23.683	7.567	22.15	13.14
30 x 18 x 40.8	159.80	731.29	1,332.65	14,755.68	12.54	20.178	11.072	47.00	30.00
35.7	140.20	652.36	1,305.41	13,593.19	12.42	20.837	10.413	41.23	26.25
30.6	120.49	570.30	1,276.52	12,318.42	12.23	21.600	9.650	35.44	22.50
25.5	100.67	484.92	1,245.19	10,906.43	11.94	22.491	8.759	29.61	18.75
20.4	80.75	396.02	1,209.83	9,323.74	11.49	23.543	7.707	23.75	15.00
17.85	70.83	350.55	1,189.86	8,461.83	11.18	24.138	7.112	20.83	13.14
30 x 15 x 40.8	149.60	650.85	1,300.56	13,555.46	12.21	20.827	10.423	44.00	30.00
35.7	131.27	580.85	1,273.90	12,467.11	12.08	21.463	9.787	38.61	26.25
30.6	112.84	508.02	1,245.51	11,276.20	11.87	22.197	9.053	33.19	22.50
25.5	94.30	432.17	1,214.52	9,960.89	11.55	23.049	8.201	27.73	18.75
20.4	75.65	353.12	1,179.28	8,492.17	11.08	24.049	7.201	22.25	15.00
17.85	66.36	312.66	1,159.22	7,695.15	10.77	24.612	6.638	19.52	13.14
30 x 12 x 40.8	139.40	570.29	1,261.54	12,273.31	11.82	21.521	9.729	41.00	30.00
35.7	122.35	509.26	1,235.65	11,269.70	11.66	22.130	9.120	35.98	26.25
30.6	105.19	445.68	1,207.92	10,173.72	11.43	22.827	8.423	30.94	22.50
25.5	87.92	379.38	1,177.43	8,966.61	11.10	23.635	7.615	25.86	18.75
20.4	70.55	310.20	1,142.42	7,623.72	10.62	24.577	6.673	20.75	15.00
17.85	61.89	274.75	1,122.33	6,897.50	10.29	25.104	6.146	18.20	13.14
30 x 9 x 40.8	129.20	489.60	1,213.08	10,900.53	11.33	22.264	8.986	38.00	30.00
35.7	113.42	437.58	1,188.23	9,993.94	11.16	22.839	8.411	33.36	26.25
30.6	97.54	383.28	1,161.42	9,005.58	10.92	23.496	7.754	28.69	22.50
25.5	81.55	326.56	1,131.67	7,919.71	10.57	24.252	6.998	23.98	18.75
20.4	65.45	267.26	1,097.10	6,715.87	10.08	25.129	6.121	19.25	15.00
17.85	57.43	236.83	1,077.06	6,066.98	9.75	25.617	5.633	16.89	13.14
30 x 6 x 40.8	119.00	408.78	1,151.29	9,427.18	10.73	23.062	8.188	35.00	30.00
35.7	104.50	365.81	1,127.90	8,631.89	10.55	23.597	7.653	30.73	26.25
30.6	89.89	320.82	1,102.41	7,765.75	10.29	24.206	7.044	26.44	22.50
25.5	75.17	273.70	1,073.78	6,815.90	9.94	24.902	6.348	22.11	18.75
20.4	60.35	224.30	1,040.02	5,765.88	9.45	25.706	5.544	17.75	15.00
17.85	52.96	198.90	1,020.20	5,201.51	9.13	26.151	5.099	15.58	13.14
27 x 27 x 40.8	180.20	856.24	1,246.48	14,338.97	11.98	16.746	11.504	53.00	27.00
35.7	158.05	763.30	1,223.10	13,277.33	11.93	17.395	10.855	46.48	23.62



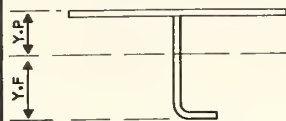
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ⁴
27 x 27 x 30.6	135.79	666.72	1,198.31	12,101.70	11.81	18.151	10.099	39.94	20.25
25.5	113.42	566.33	1,171.39	10,784.75	11.59	19.043	9.207	33.36	16.87
20.4	90.95	461.94	1,140.97	9,289.06	11.23	20.109	8.141	26.75	13.50
17.85	79.76	408.62	1,123.78	8,465.44	10.97	20.717	7.533	23.46	11.83
27 x 24 x 40.8	170.00	783.93	1,229.25	13,522.36	11.81	17.250	11.000	50.00	27.00
35.7	149.12	698.93	1,206.05	12,500.53	11.74	17.885	10.365	43.86	23.62
30.6	128.14	610.60	1,181.35	11,371.71	11.60	18.624	9.626	37.69	20.25
25.5	107.05	518.75	1,154.42	10,111.13	11.36	19.491	8.759	31.48	16.87
20.4	85.85	423.22	1,123.81	8,685.18	10.97	20.522	7.728	25.25	13.50
17.85	75.30	374.41	1,106.40	7,902.81	10.70	21.107	7.143	22.15	11.83
27 x 21 x 40.8	159.80	711.48	1,209.11	12,653.58	11.61	17.785	10.465	47.00	27.00
35.7	140.20	634.47	1,186.12	11,677.45	11.51	18.405	9.845	41.23	23.62
30.6	120.49	554.41	1,161.56	10,601.82	11.35	19.123	9.127	35.44	20.25
25.5	100.67	471.13	1,134.65	9,404.48	11.09	19.962	8.288	29.61	16.87
20.4	80.75	384.48	1,103.85	8,055.65	10.68	20.952	7.298	23.75	13.50
17.85	70.83	340.19	1,086.22	7,318.34	10.40	21.513	6.737	20.83	11.83
27 x 18 x 40.8	149.60	638.91	1,185.24	11,727.45	11.36	18.355	9.895	44.00	27.00
35.7	131.27	569.92	1,162.54	10,803.84	11.24	18.957	9.293	38.61	23.62
30.6	112.84	498.16	1,138.17	9,788.66	11.06	19.650	8.600	33.19	20.25
25.5	94.30	423.48	1,111.31	8,662.32	10.78	20.455	7.795	27.73	16.87
20.4	75.65	345.71	1,080.34	7,398.79	10.35	21.401	6.849	22.25	13.50
17.85	66.36	305.95	1,062.50	6,710.74	10.05	21.934	6.316	19.52	11.83
27 x 15 x 40.8	139.40	566.21	1,156.50	10,738.10	11.05	18.965	9.285	41.00	27.00
35.7	122.35	505.28	1,134.18	9,874.88	10.92	19.543	8.707	35.98	23.62
30.6	105.19	441.85	1,110.09	8,928.48	10.71	20.207	8.043	30.94	20.25
25.5	87.92	375.78	1,083.36	7,881.90	10.41	20.975	7.275	25.86	16.87
20.4	70.55	306.93	1,052.26	6,712.80	9.96	21.871	6.379	20.75	13.50
17.85	61.89	271.70	1,034.21	6,078.61	9.66	22.372	5.878	18.20	11.83
27 x 12 x 40.8	129.20	493.37	1,121.23	9,678.83	10.68	19.618	8.632	38.00	27.00
35.7	113.42	440.55	1,099.43	8,885.15	10.52	20.168	8.082	33.36	23.62
30.6	97.54	385.48	1,075.76	8,017.08	10.30	20.798	7.452	28.69	20.25
25.5	81.55	328.06	1,049.27	7,060.18	9.98	21.521	6.729	23.98	16.87
20.4	65.45	268.13	1,018.13	5,995.69	9.52	22.361	5.889	19.25	13.50
17.85	57.43	237.44	999.89	5,420.42	9.22	22.829	5.421	16.89	11.83
27 x 9 x 40.8	119.00	420.41	1,076.92	8,541.95	10.21	20.318	7.932	35.00	27.00
35.7	104.50	375.72	1,055.88	7,828.48	10.04	20.836	7.414	30.73	23.62
30.6	89.89	329.05	1,032.83	7,049.75	9.81	21.424	6.826	26.44	20.25
25.5	75.17	280.29	1,006.76	6,193.80	9.48	22.098	6.152	22.11	16.87
20.4	60.35	229.31	975.74	5,245.29	9.01	22.874	5.376	17.75	13.50
17.85	52.96	203.16	957.38	4,734.53	8.71	23.305	4.945	15.58	11.83
27 x 6 x 40.8	108.80	347.32	1,019.58	7,318.61	9.63	21.072	7.178	32.00	27.00
35.7	95.57	310.81	999.66	6,697.84	9.45	21.550	6.700	28.11	23.62
30.6	82.24	272.56	977.59	6,021.16	9.20	22.091	6.159	24.19	20.25
25.5	68.80	232.49	952.28	5,279.00	8.87	22.706	5.544	20.23	16.87
20.4	55.25	190.47	921.69	4,459.22	8.40	23.412	4.838	16.25	13.50
17.85	48.49	168.87	903.36	4,019.16	8.11	23.801	4.449	14.26	11.83
24 x 24 x 40.8	159.80	679.78	1,078.48	10,528.33	10.59	15.488	9.762	47.00	24.00
35.7	140.20	606.15	1,059.68	9,736.10	10.51	16.062	9.188	41.23	21.00
30.6	120.49	529.54	1,039.37	8,857.96	10.37	16.728	8.522	35.44	18.00
25.5	100.67	449.84	1,016.80	7,874.67	10.15	17.505	7.745	29.61	15.00
20.4	80.75	366.92	990.50	6,760.41	9.78	18.425	6.825	23.75	12.00
17.85	70.83	324.55	975.20	6,148.67	9.53	18.945	6.305	20.83	10.51
24 x 22 x 40.8	153.00	636.72	1,067.11	10,069.11	10.47	15.814	9.436	45.00	24.00
35.7	134.25	567.81	1,048.35	9,300.10	10.38	16.379	8.871	39.48	21.00
30.6	115.39	496.11	1,028.04	8,449.34	10.23	17.031	8.219	33.94	18.00
25.5	96.42	421.50	1,005.38	7,499.00	9.98	17.791	7.459	28.36	15.00



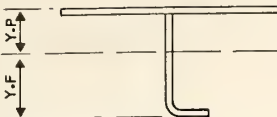
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

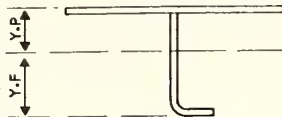
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STEEL

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 22 x 20.4	77.35	343.86	978.85	6,425.32	9.61	18.686	6.564	22.75	12.00
17.85	67.85	304.19	963.35	5,837.45	9.35	19.190	6.060	19.96	10.51
24 x 20 x 40.8	146.20	593.59	1,054.36	9,589.47	10.33	16.155	9.095	43.00	24.00
35.7	128.30	529.43	1,035.67	8,846.07	10.23	16.709	8.541	37.73	21.00
30.6	110.29	462.65	1,015.36	8,025.26	10.06	17.346	7.904	32.44	18.00
25.5	92.17	393.15	992.61	7,110.63	9.80	18.086	7.164	27.11	15.00
20.4	73.95	320.79	965.84	6,080.47	9.41	18.954	6.296	21.75	12.00
17.85	64.87	283.81	950.13	5,517.97	9.15	19.442	5.808	19.08	10.51
24 x 18 x 40.8	139.40	550.41	1,039.96	9,087.99	10.17	16.511	8.739	41.00	24.00
35.7	122.35	491.01	1,021.36	8,372.86	10.05	17.052	8.198	35.98	21.00
30.6	105.19	429.17	1,001.07	7,584.83	9.87	17.673	7.577	30.94	18.00
25.5	87.92	364.78	978.24	6,708.91	9.60	18.392	6.858	25.86	15.00
20.4	70.55	297.72	951.23	5,725.42	9.20	19.231	6.019	20.75	12.00
17.85	61.89	263.43	935.31	5,189.88	8.93	19.701	5.549	18.20	10.51
24 x 16 x 40.8	132.60	507.17	1,023.58	8,563.17	9.99	16.884	8.366	39.00	24.00
35.7	116.40	452.55	1,005.09	7,879.24	9.86	17.411	7.839	34.23	21.00
30.6	100.09	395.66	984.85	7,127.09	9.66	18.013	7.237	29.44	18.00
25.5	83.67	336.39	961.96	6,293.15	9.38	18.708	6.542	24.61	15.00
20.4	67.15	274.63	934.72	5,359.71	8.97	19.516	5.734	19.75	12.00
17.85	58.92	243.04	918.58	4,852.84	8.69	19.967	5.283	17.33	10.51
24 x 14 x 40.8	125.80	463.87	1,004.78	8,013.32	9.77	17.275	7.975	37.00	24.00
35.7	110.45	414.05	986.45	7,363.86	8.63	17.785	7.465	32.48	21.00
30.6	94.99	362.12	966.28	6,651.00	9.43	18.367	6.883	27.94	18.00
25.5	79.42	307.98	943.36	5,862.58	9.14	19.035	6.215	23.36	15.00
20.4	63.75	251.54	915.89	4,982.85	8.71	19.810	5.440	18.75	12.00
17.85	55.94	222.65	899.53	4,506.47	8.44	20.240	5.010	16.45	10.51
24 x 12 x 40.8	119.00	420.52	982.97	7,436.62	9.53	17.685	7.565	35.00	24.00
35.7	104.50	375.50	964.85	6,825.23	9.38	18.176	7.074	30.73	21.00
30.6	89.89	328.55	944.82	6,155.43	9.16	18.735	6.515	26.44	18.00
25.5	75.17	279.56	921.89	5,416.42	8.86	19.375	5.875	22.11	15.00
20.4	60.35	228.44	894.22	4,594.34	8.43	20.112	5.138	17.75	12.00
17.85	52.96	202.25	877.65	4,150.39	8.15	20.521	4.729	15.58	10.51
24 x 10 x 40.8	112.20	377.10	957.38	6,831.05	9.25	18.115	7.135	33.00	24.00
35.7	98.55	336.92	939.55	6,261.76	9.09	18.585	6.665	28.98	21.00
30.6	84.79	294.96	919.71	5,639.16	8.86	19.119	6.131	24.94	18.00
25.5	70.92	251.12	896.85	4,953.79	8.55	19.726	5.524	20.86	15.00
20.4	56.95	205.32	869.03	4,193.61	8.12	20.424	4.826	16.75	12.00
17.85	49.98	181.85	852.26	3,784.18	7.84	20.810	4.440	14.70	10.51
24 x 8 x 40.8	105.40	333.62	926.92	6,194.38	8.92	18.567	6.683	31.00	24.00
35.7	92.60	298.29	909.49	5,671.69	8.75	19.014	6.236	27.23	21.00
30.6	79.69	261.34	889.96	5,100.87	8.52	19.518	5.732	23.44	18.00
25.5	66.67	222.67	867.25	4,473.76	8.20	20.091	5.159	19.61	15.00
20.4	53.55	182.20	839.37	3,780.09	7.77	20.747	4.503	15.75	12.00
17.85	47.00	161.43	822.44	3,407.39	7.49	21.107	4.143	13.82	10.51
24 x 6 x 40.8	98.60	290.08	890.05	5,524.16	8.53	19.043	6.207	29.00	24.00
35.7	86.65	259.62	873.20	5,053.08	8.36	19.463	5.787	25.48	21.00
30.6	74.59	227.69	854.13	4,539.11	8.12	19.936	5.314	21.94	18.00
25.5	62.42	194.20	831.74	3,975.34	7.81	20.470	4.780	18.36	15.00
20.4	50.15	159.07	803.94	3,353.14	7.38	21.079	4.171	14.75	12.00
17.85	44.02	141.02	786.93	3,019.58	7.10	21.413	3.837	12.95	10.51
21 x 20 x 40.8	136.00	503.78	909.21	7,212.67	9.11	14.317	7.933	40.00	21.00
35.7	119.37	449.44	894.27	6,655.25	9.01	14.808	7.442	35.11	18.37
30.6	102.64	392.81	877.69	6,037.81	8.85	15.371	6.879	30.19	15.75
25.5	85.80	333.81	858.65	5,348.12	8.61	16.021	6.229	25.23	13.12
20.4	68.85	272.36	835.54	4,570.21	8.25	16.780	5.470	20.25	10.50
17.85	60.40	240.94	821.63	4,145.31	8.01	17.205	5.045	17.77	9.20

<div>  <div> <div>PROPERTIES OF</div> <div>COMBINED BEAM AND PLATE</div> <div>FLANGED PLATE</div> </div> <div>30†</div> </div>									
STEEL									
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	465.88	896.73	6,821.68	8.97	14.643	7.607	38.00	21.00
35.7	113.42	415.70	881.77	6,285.87	8.85	15.121	7.129	33.36	18.37
30.6	97.54	363.39	865.11	5,693.73	8.68	15.669	6.581	28.69	15.75
25.5	81.55	308.87	845.88	5,034.18	8.43	16.299	5.951	23.98	13.12
20.4	65.45	252.07	822.42	4,292.81	8.06	17.030	5.220	19.25	10.50
17.85	57.43	223.02	808.23	3,889.09	7.81	17.438	4.812	16.89	9.20
21 x 16 x 40.8	122.40	427.91	882.44	6,411.83	8.80	14.984	7.266	36.00	21.00
35.7	107.47	381.91	867.49	5,900.02	8.67	15.449	6.801	31.61	18.37
30.6	92.44	333.94	850.75	5,335.72	8.49	15.978	6.272	27.19	15.75
25.5	77.30	283.92	831.33	4,708.96	8.22	16.586	5.664	22.73	13.12
20.4	62.05	231.77	807.50	4,006.89	7.84	17.288	4.962	18.25	10.50
17.85	54.45	205.10	793.03	3,625.72	7.59	17.678	4.572	16.01	9.20
21 x 14 x 40.8	115.60	389.89	865.93	5,981.72	8.60	15.342	6.908	34.00	21.00
35.7	101.52	348.08	851.00	5,496.58	8.46	15.791	6.459	29.86	18.37
30.6	87.34	304.46	834.21	4,962.91	8.27	16.301	5.949	25.69	15.75
25.5	73.05	258.95	814.61	4,371.84	8.00	16.883	5.367	21.48	13.12
20.4	58.65	211.47	790.40	3,712.05	7.61	17.554	4.696	17.25	10.50
17.85	51.47	187.17	775.64	3,354.92	7.36	17.925	4.325	15.14	9.20
21 x 12 x 40.8	108.80	351.80	846.64	5,529.80	8.37	15.719	6.531	32.00	21.00
35.7	95.57	314.21	831.77	5,074.31	8.23	16.149	6.101	28.11	18.37
30.6	82.24	274.95	814.95	4,574.36	8.02	16.637	5.613	24.19	15.75
25.5	68.80	233.96	795.19	4,022.17	7.74	17.192	5.058	20.23	13.12
20.4	55.25	191.16	770.61	3,407.87	7.35	17.828	4.422	16.25	10.50
17.85	48.49	169.23	755.55	3,076.35	7.09	18.178	4.072	14.26	9.20
21 x 10 x 40.8	102.00	313.66	823.78	5,054.38	8.11	16.114	6.136	30.00	21.00
35.7	89.62	280.30	809.04	4,631.86	7.95	16.525	5.725	26.36	18.37
30.6	77.14	245.42	792.24	4,169.06	7.74	16.988	5.262	22.69	15.75
25.5	64.55	208.95	772.36	3,659.23	7.45	17.512	4.738	18.98	13.12
20.4	51.85	170.83	747.44	3,093.90	7.06	18.111	4.139	15.25	10.50
17.85	45.51	151.29	732.08	2,789.69	6.80	18.439	3.811	13.39	9.20
21 x 8 x 40.8	95.20	275.45	796.29	4,553.56	7.80	16.532	5.718	28.00	21.00
35.7	83.67	246.34	781.75	4,167.76	7.64	16.919	5.331	24.61	18.37
30.6	72.04	215.86	765.05	3,745.90	7.42	17.354	4.896	21.19	15.75
25.5	60.30	183.93	745.12	3,282.25	7.13	17.845	4.405	17.73	13.12
20.4	48.45	150.50	719.93	2,769.66	6.73	18.403	3.847	14.25	10.50
17.85	42.53	133.34	704.31	2,494.57	6.48	18.708	3.542	12.51	9.20
21 x 6 x 40.8	88.40	237.18	762.58	4,025.27	7.43	16.971	5.279	26.00	21.00
35.7	77.72	212.34	748.39	3,680.36	7.26	17.332	4.918	22.86	18.37
30.6	66.94	186.27	731.93	3,303.67	7.05	17.736	4.514	19.69	15.75
25.5	56.05	158.89	712.08	2,890.39	6.75	18.191	4.059	16.48	13.12
20.4	45.05	130.16	686.74	2,434.63	6.36	18.705	3.545	13.25	10.50
17.85	39.56	115.39	670.93	2,190.61	6.12	18.985	3.265	11.63	9.20
18 x 18 x 40.8	119.00	385.39	755.45	4,912.56	7.75	12.747	6.503	35.00	18.00
35.7	104.50	344.05	743.69	4,528.12	7.64	13.161	6.089	30.73	15.75
30.6	89.89	300.88	730.21	4,101.80	7.48	13.633	5.617	26.44	13.50
25.5	75.17	255.82	714.16	3,625.72	7.25	14.173	5.077	22.11	11.25
20.4	60.35	208.81	693.85	3,089.80	6.91	14.797	4.453	17.75	9.00
15.3	45.42	159.81	665.72	2,480.86	6.42	15.523	3.727	13.36	6.75
18 x 16 x 40.8	112.20	352.76	743.18	4,604.90	7.59	13.054	6.196	33.00	18.00
35.7	98.55	314.99	731.32	4,238.16	7.47	13.455	5.795	28.98	15.75
30.6	84.79	275.53	717.67	3,832.57	7.31	13.910	5.340	24.94	13.50
25.5	70.92	234.33	701.31	3,381.10	7.07	14.429	4.821	20.86	11.25
20.4	56.95	191.33	680.52	2,874.84	6.72	15.026	4.224	16.75	9.00
15.3	42.87	146.48	651.60	2,302.24	6.22	15.717	3.533	12.61	6.75
18 x 14 x 40.8	105.40	320.08	728.91	4,281.44	7.41	13.376	5.874	31.00	18.00
35.7	92.60	285.89	716.95	3,934.51	7.29	13.762	5.488	27.23	15.75
30.6	79.69	250.16	703.12	3,551.85	7.11	14.198	5.052	23.44	13.50



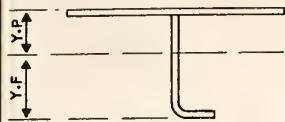
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 25.5	66.67	212.82	686.45	3,127.29	6.86	14.694	4.556	19.61	11.25
20.4	53.55	173.84	665.16	2,653.02	6.51	15.261	3.989	15.75	9.00
15.3	40.32	133.15	635.41	2,119.05	6.01	15.915	3.335	11.86	6.75
18 x 12 x 40.8	98.60	287.33	712.08	3,940.94	7.21	13.716	5.534	29.00	18.00
35.7	86.65	256.75	700.05	3,616.18	7.07	14.084	5.166	25.48	15.75
30.6	74.59	224.76	686.05	3,258.90	6.88	14.500	4.750	21.94	13.50
25.5	62.42	191.30	669.08	2,863.75	6.63	14.970	4.280	18.36	11.25
20.4	50.15	156.34	647.27	2,423.99	6.27	15.505	3.745	14.75	9.00
15.3	37.77	119.81	616.68	1,931.13	5.77	16.118	3.132	11.11	6.75
18 x 10 x 40.8	91.80	254.52	691.96	3,582.02	6.96	14.073	5.177	27.00	18.00
35.7	80.70	227.56	679.89	3,282.07	6.82	14.423	4.827	23.73	15.75
30.6	69.49	199.33	665.74	2,952.90	6.62	14.815	4.435	20.44	13.50
25.5	58.17	169.76	648.48	2,589.91	6.36	15.256	3.994	17.11	11.25
20.4	46.75	138.82	626.18	2,187.42	6.01	15.757	3.493	13.75	9.00
15.3	35.22	106.46	594.74	1,738.28	5.51	16.327	2.923	10.36	6.75
18 x 8 x 40.8	85.00	221.65	667.47	3,203.12	6.68	14.451	4.799	25.00	18.00
35.7	74.75	198.33	655.42	2,930.99	6.52	14.778	4.472	21.98	15.75
30.6	64.39	173.87	641.18	2,632.96	6.33	15.144	4.106	18.94	13.50
25.5	53.92	148.20	623.69	2,305.17	6.06	15.554	3.696	15.86	11.25
20.4	43.35	121.30	600.92	1,942.91	5.71	16.017	3.233	12.75	9.00
15.3	32.67	93.12	568.71	1,540.30	5.22	16.542	2.708	9.61	6.75
18 x 6 x 40.8	78.20	188.72	637.00	2,802.55	6.33	14.850	4.400	23.00	18.00
35.7	68.80	169.06	625.09	2,561.60	6.18	15.152	4.098	20.23	15.75
30.6	59.29	148.38	610.88	2,298.09	5.98	15.488	3.762	17.44	13.50
25.5	49.67	126.63	593.25	2,008.85	5.72	15.864	3.386	14.61	11.25
20.4	39.95	103.78	570.14	1,690.05	5.37	16.286	2.964	11.75	9.00
15.3	30.12	79.77	537.30	1,337.01	4.90	16.762	2.488	8.86	6.75

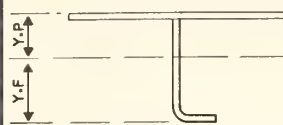


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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56.1 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,070.97	1,656.32	20,406.72	13.28	19.055	12.320	59.00	30.00
35.7	175.90	953.24	1,626.40	18,856.17	13.19	19.781	11.594	51.73	26.25
30.6	151.09	831.31	1,594.50	17,144.08	13.02	20.623	10.752	44.44	22.50
25.5	126.17	705.00	1,559.62	15,233.35	12.74	21.608	9.767	37.11	18.75
20.4	101.15	574.11	1,519.79	13,073.94	12.30	22.773	8.602	29.75	15.00
17.85	88.70	507.43	1,497.03	11,890.23	11.98	23.432	7.943	26.09	13.14
30 x 27 x 40.8	190.40	989.65	1,635.82	19,346.17	13.10	19.548	11.827	56.00	30.00
35.7	166.97	880.97	1,606.05	17,849.41	12.99	20.261	11.114	49.11	26.25
30.6	143.44	768.39	1,574.20	16,200.53	12.80	21.084	10.291	42.19	22.50
25.5	119.80	651.74	1,539.23	14,365.67	12.50	22.042	9.333	35.23	18.75
20.4	96.05	530.84	1,499.07	12,299.58	12.03	23.170	8.205	28.25	15.00
17.85	84.23	469.22	1,476.01	11,170.73	11.71	23.807	7.568	24.77	13.14
30 x 24 x 40.8	180.20	908.23	1,612.26	18,227.62	12.89	20.069	11.306	53.00	30.00
35.7	158.05	808.62	1,582.67	16,791.44	12.76	20.765	10.610	46.48	26.25
30.6	135.79	705.42	1,550.91	15,213.04	12.55	21.566	9.809	39.94	22.50
25.5	113.42	598.46	1,515.86	13,461.86	12.23	22.494	8.881	33.36	18.75
20.4	90.95	487.54	1,475.38	11,497.38	11.74	23.582	7.793	26.75	15.00
17.85	79.76	431.01	1,452.01	10,427.63	11.41	24.193	7.182	23.46	13.14
30 x 21 x 40.8	170.00	826.70	1,584.89	17,046.19	12.64	20.620	10.755	50.00	30.00
35.7	149.12	736.20	1,555.55	15,678.24	12.49	21.296	10.079	43.86	26.25
30.6	128.14	642.40	1,523.92	14,178.48	12.26	22.071	9.304	37.69	22.50
25.5	107.05	545.14	1,488.83	12,519.62	11.92	22.966	8.409	31.48	18.75
20.4	85.85	444.24	1,448.03	10,665.81	11.41	24.009	7.366	25.25	15.00
17.85	75.30	392.79	1,424.33	9,659.77	11.07	24.593	6.782	22.15	13.14
30 x 18 x 40.8	159.80	745.06	1,552.72	15,796.42	12.34	21.202	10.173	47.00	30.00
35.7	140.20	663.71	1,523.70	14,505.38	12.17	21.855	9.520	41.23	26.25
30.6	120.49	579.33	1,492.27	13,093.40	11.92	22.601	8.774	35.44	22.50
25.5	100.67	491.79	1,457.19	11,536.44	11.56	23.458	7.917	29.61	18.75
20.4	80.75	400.91	1,416.09	9,803.24	11.04	24.452	6.923	25.75	15.00
17.85	70.83	354.55	1,392.06	8,865.88	10.69	25.006	6.369	20.83	13.14
30 x 15 x 40.8	149.60	663.30	1,514.36	14,472.20	11.99	21.818	9.557	44.00	30.00
35.7	131.27	591.13	1,485.77	13,267.92	11.80	22.445	8.930	38.61	26.25
30.6	112.84	516.21	1,454.64	11,954.00	11.53	23.157	8.218	33.19	22.50
25.5	94.30	438.41	1,419.66	10,509.60	11.16	23.972	7.403	27.73	18.75
20.4	75.65	357.57	1,378.31	8,907.89	10.62	24.912	6.463	22.25	15.00
17.85	66.36	316.30	1,353.95	8,044.62	10.27	25.433	5.942	19.52	13.14
30 x 12 x 40.8	139.40	581.44	1,467.83	13,066.67	11.56	22.473	8.902	41.00	30.00
35.7	122.35	518.48	1,439.85	11,960.37	11.36	23.068	8.307	35.98	26.25
30.6	105.19	453.04	1,409.17	10,756.09	11.08	23.742	7.633	30.94	22.50
25.5	87.92	385.00	1,374.41	9,436.12	10.69	24.509	6.866	25.86	18.75
20.4	70.55	314.22	1,332.92	7,977.86	10.15	25.390	5.985	20.75	15.00
17.85	61.89	278.04	1,308.28	7,194.55	9.80	25.876	5.499	18.20	13.14
30 x 9 x 40.8	129.20	499.46	1,410.20	11,572.11	11.05	23.169	8.206	38.00	30.00
35.7	113.42	445.74	1,383.10	10,576.61	10.84	23.728	7.647	33.36	26.25
30.6	97.54	389.82	1,353.12	9,495.07	10.55	24.358	7.017	28.69	22.50
25.5	81.55	331.56	1,318.80	8,312.75	10.15	25.072	6.303	23.98	18.75
20.4	65.45	270.84	1,277.35	7,011.10	9.61	25.886	5.489	19.25	15.00
17.85	57.43	239.77	1,252.52	6,314.12	9.26	26.334	5.041	16.89	13.14
30 x 6 x 40.8	119.00	417.38	1,336.99	9,979.77	10.43	23.911	7.464	35.00	30.00
35.7	104.50	372.94	1,311.17	9,109.78	10.21	24.427	6.948	30.73	26.25
30.6	89.89	326.54	1,282.29	8,165.79	9.91	25.007	6.368	26.44	22.50
25.5	75.17	278.09	1,248.81	7,135.93	9.52	25.661	5.714	22.11	18.75
20.4	60.35	227.45	1,207.78	6,005.38	8.98	26.403	4.972	17.75	15.00
17.85	52.96	201.49	1,182.93	5,401.67	8.65	26.809	4.566	15.58	13.14
27 x 27 x 40.8	180.20	871.44	1,456.48	15,470.70	11.88	17.753	10.622	53.00	27.00
35.7	158.05	775.76	1,431.64	14,276.26	11.76	18.403	9.972	46.48	23.62



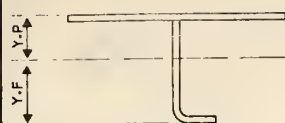
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	676.58	1,404.70	12,957.15	11.58	19.151	9.224	39.94	20.25
25.5	113.42	573.79	1,374.60	11,486.50	11.29	20.019	8.356	33.36	16.87
20.4	90.95	467.23	1,339.25	9,828.68	10.85	21.036	7.339	26.75	13.50
17.85	79.76	412.94	1,318.53	8,922.69	10.55	21.608	6.767	23.46	11.83
27 x 24 x 40.8	170.00	797.91	1,435.58	14,552.34	11.68	18.238	10.137	50.00	27.00
35.7	149.12	710.40	1,410.79	13,406.73	11.55	18.872	9.503	43.86	23.62
30.6	128.14	619.69	1,383.79	12,144.94	11.34	19.598	8.777	37.69	20.25
25.5	107.05	525.64	1,353.47	10,742.83	11.04	20.438	7.937	31.48	16.87
20.4	85.85	428.11	1,317.63	9,168.70	10.58	21.417	6.958	25.25	13.50
17.85	75.30	378.41	1,296.51	8,311.52	10.27	21.964	6.411	22.15	11.83
27 x 21 x 40.8	159.80	724.26	1,411.18	13,580.86	11.44	18.751	9.624	47.00	27.00
35.7	140.20	644.97	1,386.47	12,490.60	11.29	19.366	9.009	41.23	23.62
30.6	120.49	562.74	1,359.44	11,293.06	11.07	20.068	8.307	35.44	20.25
25.5	100.67	477.46	1,328.90	9,966.85	10.75	20.875	7.500	29.61	16.87
20.4	80.75	388.98	1,292.56	8,484.10	10.27	21.811	6.564	23.75	13.50
17.85	70.83	343.87	1,271.01	7,679.63	9.95	22.333	6.042	20.83	11.83
27 x 18 x 40.8	149.60	650.51	1,382.32	12,551.51	11.16	19.295	9.080	44.00	27.00
35.7	131.27	579.46	1,357.75	11,524.01	11.00	19.887	8.488	38.61	23.62
30.6	112.84	505.75	1,330.73	10,398.54	10.76	20.561	7.814	33.19	20.25
25.5	94.30	429.24	1,299.99	9,156.41	10.41	21.332	7.043	27.73	16.87
20.4	75.65	349.83	1,263.13	7,773.49	9.92	22.221	6.154	22.25	13.50
17.85	66.36	309.32	1,241.14	7,025.95	9.60	22.714	5.661	19.52	11.83
27 x 15 x 40.8	139.40	576.64	1,347.66	11,458.96	10.83	19.872	8.503	41.00	27.00
35.7	122.35	513.87	1,323.30	10,502.68	10.65	20.438	7.937	35.98	23.62
30.6	105.19	448.70	1,296.35	9,458.10	10.39	21.079	7.296	30.94	20.25
25.5	87.92	381.00	1,265.47	8,309.15	10.03	21.809	6.566	25.86	16.87
20.4	70.55	310.66	1,228.10	7,035.36	9.53	22.646	5.729	20.75	13.50
17.85	61.89	274.76	1,205.66	6,349.34	9.21	23.109	5.266	18.20	11.83
27 x 12 x 40.8	129.20	502.65	1,305.23	10,297.21	10.43	20.486	7.889	38.00	27.00
35.7	113.42	448.20	1,281.23	9,421.82	10.23	21.021	7.354	33.36	23.62
30.6	97.54	391.59	1,254.46	8,468.10	9.96	21.625	6.750	28.69	20.25
25.5	81.55	332.72	1,223.52	7,422.53	9.59	22.308	6.067	23.98	16.87
20.4	65.45	271.48	1,185.71	6,268.08	9.08	23.089	5.286	19.25	13.50
17.85	57.43	240.19	1,162.84	5,648.57	8.76	23.517	4.858	16.89	11.83
27 x 9 x 40.8	119.00	428.55	1,252.11	9,059.46	9.94	21.140	7.235	35.00	27.00
35.7	104.50	382.46	1,228.68	8,276.08	9.73	21.639	6.736	30.73	23.62
30.6	89.89	334.44	1,202.30	7,424.51	9.45	22.200	6.175	26.44	20.25
25.5	75.17	284.42	1,171.47	6,493.72	9.08	22.832	5.543	22.11	16.87
20.4	60.35	232.28	1,133.38	5,469.88	8.57	23.549	4.826	17.75	13.50
17.85	52.96	205.60	1,110.13	4,922.32	8.25	23.941	4.434	15.58	11.83
27 x 6 x 40.8	108.80	354.34	1,183.67	7,738.00	9.34	21.838	6.537	32.00	27.00
35.7	95.57	316.63	1,161.18	7,059.41	9.12	22.295	6.080	28.11	23.62
30.6	82.24	277.24	1,135.54	6,322.88	8.84	22.807	5.568	24.19	20.25
25.5	68.80	236.08	1,105.17	5,519.63	8.47	23.381	4.994	20.23	16.87
20.4	55.25	193.06	1,067.11	4,638.85	7.97	24.028	4.347	16.25	13.50
17.85	48.49	171.01	1,043.67	4,169.18	7.66	24.380	3.995	14.26	11.83
24 x 24 x 40.8	159.80	691.52	1,260.94	11,332.44	10.45	16.388	8.987	47.00	24.00
35.7	140.20	615.76	1,240.47	10,441.73	10.33	16.957	8.418	41.23	21.00
30.6	120.49	537.15	1,217.78	9,458.32	10.13	17.608	7.767	35.44	18.00
25.5	100.67	455.61	1,191.73	8,363.62	9.84	18.357	7.018	29.61	15.00
20.4	80.75	371.03	1,160.11	7,133.45	9.42	19.226	6.149	23.75	12.00
17.85	70.83	327.92	1,141.05	6,463.53	9.13	19.710	5.665	20.83	10.51
24 x 22 x 40.8	153.00	647.75	1,247.00	10,817.50	10.31	16.700	8.675	45.00	24.00
35.7	134.25	576.85	1,226.48	9,955.34	10.17	17.258	8.117	39.48	21.00
30.6	115.39	503.28	1,203.67	9,005.40	9.97	17.893	7.482	33.94	18.00
25.5	96.42	426.94	1,177.36	7,950.59	9.67	18.622	6.753	28.36	15.00



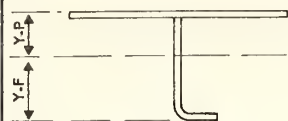
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LB/FT.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 22 x 20.4	77.35	347.74	1,145.29	6,768.81	9.23	19.465	5.910	22.75	12.00
17.85	67.85	307.37	1,125.90	6,126.90	8.94	19.933	5.442	19.96	10.51
24 x 20 x 40.8	146.20	603.93	1,231.39	10,281.92	10.16	17.025	8.350	43.00	24.00
35.7	128.30	537.91	1,210.84	9,450.93	10.00	17.570	7.805	37.73	21.00
30.6	110.29	469.38	1,187.90	8,537.24	9.79	18.188	7.187	32.44	18.00
25.5	92.17	398.26	1,161.34	7,525.25	9.48	18.895	6.480	27.11	15.00
20.4	73.95	324.45	1,128.80	6,394.87	9.03	19.710	5.665	21.75	12.00
17.85	64.87	286.81	1,109.06	5,782.50	8.74	20.161	5.214	19.08	10.51
24 x 18 x 40.8	139.40	560.05	1,213.79	9,724.41	9.98	17.363	8.012	41.00	24.00
35.7	122.35	498.93	1,193.23	8,927.47	9.81	17.893	7.482	35.98	21.00
30.6	105.19	435.46	1,170.17	8,053.06	9.59	18.493	6.882	30.94	18.00
25.5	87.92	369.57	1,143.36	7,087.02	9.27	19.177	6.198	25.86	15.00
20.4	70.55	301.15	1,110.33	6,011.28	8.81	19.961	5.414	20.75	12.00
17.85	61.89	266.25	1,090.22	5,430.03	8.51	20.394	4.981	18.20	10.51
24 x 16 x 40.8	132.60	516.13	1,193.81	9,143.61	9.77	17.716	7.659	39.00	24.00
35.7	116.40	459.92	1,173.25	8,383.87	9.60	18.229	7.146	34.23	21.00
30.6	100.09	401.52	1,150.10	7,552.02	9.36	18.809	6.566	29.44	18.00
25.5	83.67	340.86	1,123.03	6,635.33	9.03	19.467	5.908	24.61	15.00
20.4	67.15	277.84	1,089.51	5,617.65	8.57	20.219	5.156	19.75	12.00
17.85	58.92	245.68	1,069.02	5,069.23	8.28	20.633	4.742	17.33	10.51
24 x 14 x 40.8	125.80	472.15	1,170.92	8,538.02	9.55	18.083	7.292	37.00	24.00
35.7	110.45	420.87	1,150.39	7,818.94	9.36	18.578	6.797	32.48	21.00
30.6	94.99	367.55	1,127.17	7,033.22	9.12	19.135	6.240	27.94	18.00
25.5	79.42	312.13	1,099.86	6,169.53	8.78	19.766	5.609	23.36	15.00
20.4	63.75	254.53	1,065.86	5,213.59	8.31	20.484	4.891	18.75	12.00
17.85	55.94	255.11	1,044.99	4,699.79	8.02	20.878	4.497	16.45	10.51
24 x 12 x 40.8	119.00	428.12	1,144.44	7,906.02	9.29	18.467	6.908	35.00	24.00
35.7	104.50	381.78	1,123.99	7,231.40	9.09	18.941	6.434	30.73	21.00
30.6	89.89	333.56	1,100.73	6,495.71	8.84	19.474	5.901	26.44	18.00
25.5	75.17	283.40	1,073.22	5,688.96	8.50	20.074	5.301	22.11	15.00
20.4	60.35	231.20	1,038.75	4,798.67	8.03	20.755	4.620	17.75	12.00
17.85	52.96	204.53	1,017.50	4,321.39	7.73	21.128	4.247	15.58	10.51
24 x 10 x 40.8	112.20	384.04	1,113.44	7,245.84	8.99	18.867	6.508	33.00	24.00
35.7	98.55	342.66	1,093.15	6,619.86	8.79	19.319	6.056	28.98	21.00
30.6	84.79	299.55	1,069.92	5,938.44	8.53	19.825	5.550	24.94	18.00
25.5	70.92	254.65	1,042.26	5,192.89	8.18	20.393	4.982	20.86	15.00
20.4	56.95	207.87	1,007.36	4,372.46	7.72	21.035	4.340	16.75	12.00
17.85	49.98	183.95	985.75	3,933.70	7.42	21.384	3.991	14.70	10.51
24 x 8 x 40.8	105.40	339.91	1,076.67	6,555.57	8.65	19.286	6.089	31.00	24.00
35.7	92.60	303.50	1,056.65	5,982.83	8.44	19.713	5.662	27.23	21.00
30.6	79.69	265.51	1,033.56	5,360.32	8.18	20.189	5.186	23.44	18.00
25.5	66.67	225.88	1,005.84	4,680.58	7.83	20.722	4.653	19.61	15.00
20.4	53.55	184.53	970.61	3,934.48	7.37	21.321	4.054	15.75	12.00
17.85	47.00	163.36	948.69	3,536.39	7.08	21.647	3.728	13.82	10.51
24 x 6 x 40.8	98.60	295.72	1,032.35	5,833.08	8.25	19.725	5.650	29.00	24.00
35.7	86.65	264.30	1,012.77	5,318.67	8.04	20.123	5.252	25.48	21.00
30.6	74.59	231.45	989.97	4,760.14	7.78	20.567	4.808	21.94	18.00
25.5	62.42	197.10	962.37	4,151.20	7.44	21.061	4.314	18.36	15.00
20.4	50.15	161.19	926.98	3,484.24	6.98	21.616	3.759	14.75	12.00
17.85	44.02	142.77	904.84	3,129.08	6.70	21.917	3.458	12.95	10.51
21 x 20 x 40.8	136.00	512.28	1,062.48	7,733.52	8.94	15.096	7.279	40.00	21.00
35.7	119.37	456.41	1,045.60	7,109.05	8.80	15.576	6.799	35.11	18.37
30.6	102.64	398.35	1,026.32	6,420.88	8.60	16.119	6.256	30.19	15.75
25.5	85.80	338.03	1,003.40	5,657.48	8.31	16.737	5.638	25.23	13.12
20.4	68.85	275.39	974.46	4,804.22	7.90	17.445	4.930	20.25	10.50
17.85	60.40	243.45	956.52	4,342.03	7.64	17.836	4.539	17.77	9.20



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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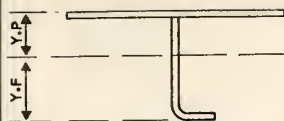
STEEL

56.1 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	473.77	1,047.02	7,298.25	8.78	15.405	6.970	38.00	21.00
35.7	113.42	422.18	1,030.02	6,700.09	8.63	15.870	6.505	33.36	18.37
30.6	97.54	368.55	1,010.51	6,042.47	8.41	16.395	5.980	28.69	15.75
25.5	81.55	312.81	987.21	5,315.03	8.12	16.991	5.384	23.98	13.12
20.4	65.45	254.91	957.68	4,504.64	7.70	17.671	4.704	19.25	10.50
17.85	57.43	225.37	939.30	4,066.92	7.43	18.045	4.330	16.89	9.20
21 x 16 x 40.8	122.40	435.21	1,029.37	6,844.21	8.59	15.726	6.649	36.00	21.00
35.7	107.47	387.92	1,012.25	6,274.92	8.43	16.176	6.199	31.61	18.37
30.6	92.44	338.72	992.51	5,650.54	8.21	16.682	5.693	27.19	15.75
25.5	77.30	287.58	968.83	4,961.79	7.90	17.254	5.121	22.73	13.12
20.4	62.05	234.42	938.67	4,197.07	7.48	17.904	4.471	18.25	10.50
17.85	54.45	207.29	919.86	3,785.18	7.21	18.260	4.115	16.01	9.20
21 x 14 x 40.8	115.60	396.60	1,009.02	6,370.16	8.38	16.062	6.313	34.00	21.00
35.7	101.52	353.61	991.80	5,832.57	8.21	16.494	5.881	29.86	18.37
30.6	87.34	308.88	971.85	5,244.34	7.98	16.979	5.396	25.69	15.75
25.5	73.05	262.33	947.78	4,597.27	7.67	17.524	4.851	21.48	13.12
20.4	58.65	213.93	916.98	3,881.18	7.24	18.142	4.233	17.25	10.50
17.85	51.47	189.21	897.71	3,496.57	6.98	18.480	3.895	15.14	9.20
21 x 12 x 40.8	108.80	357.94	985.31	5,874.73	8.14	16.413	5.962	32.00	21.00
35.7	95.57	319.28	968.01	5,371.97	7.96	16.826	5.549	28.11	18.37
30.6	82.24	279.01	947.86	4,823.07	7.72	17.287	5.088	24.19	15.75
25.5	68.80	237.07	923.42	4,220.90	7.41	17.804	4.571	20.23	13.12
20.4	55.25	193.42	891.99	3,556.63	6.98	18.388	3.987	16.25	10.50
17.85	48.49	171.12	872.27	3,200.83	6.72	18.705	3.670	14.26	9.20
21 x 10 x 40.8	102.00	319.22	957.33	5,356.45	7.86	16.780	5.595	30.00	21.00
35.7	89.62	284.90	940.00	4,891.97	7.67	17.171	5.204	26.36	18.37
30.6	77.14	249.11	919.70	4,385.89	7.43	17.606	4.769	22.69	15.75
25.5	64.55	211.80	894.93	3,832.09	7.12	18.093	4.282	18.98	13.12
20.4	51.85	172.91	862.89	3,223.06	6.69	18.640	3.735	15.25	10.50
17.85	45.51	153.02	842.73	2,897.70	6.43	18.937	3.438	13.39	9.20
21 x 8 x 40.8	95.20	280.45	923.79	4,813.71	7.54	17.164	5.211	28.00	21.00
35.7	83.67	250.49	906.83	4,391.30	7.35	17.531	4.844	24.61	18.37
30.6	72.04	219.19	886.16	3,931.88	7.11	17.938	4.437	21.19	15.75
25.5	60.30	186.51	861.13	3,430.24	6.79	18.392	3.983	17.73	13.12
20.4	48.45	152.39	828.56	2,880.09	6.37	18.899	3.476	14.25	10.50
17.85	42.53	134.92	808.01	2,586.90	6.11	19.173	3.202	12.51	9.20
21 x 6 x 40.8	88.40	241.63	882.88	4,244.72	7.16	17.567	4.808	26.00	21.00
35.7	77.72	216.04	865.84	3,868.62	6.97	17.907	4.468	22.86	18.37
30.6	66.94	189.25	845.54	3,460.03	6.73	18.283	4.092	19.69	15.75
25.5	56.05	161.21	820.39	3,014.65	6.42	18.700	3.675	16.48	13.12
20.4	45.05	131.87	787.47	2,527.31	6.01	19.166	3.209	13.25	10.50
17.85	39.56	116.82	766.63	2,268.13	5.76	19.416	2.959	11.63	9.20
18 x 18 x 40.8	119.00	391.77	881.92	5,255.75	7.57	13.416	5.959	35.00	18.00
35.7	104.50	349.29	868.06	4,825.75	7.43	13.816	5.559	30.73	15.75
30.6	89.89	305.06	851.69	4,351.82	7.23	14.265	5.110	26.44	13.50
25.5	75.17	259.03	831.54	3,826.68	6.97	14.773	4.602	22.11	11.25
20.4	60.35	211.16	805.21	3,241.21	6.60	15.350	4.025	17.75	9.00
15.3	45.42	161.40	767.64	2,583.90	6.07	16.009	3.366	13.36	6.75
18 x 16 x 40.8	112.20	358.63	866.53	4,914.52	7.40	13.704	5.671	33.00	18.00
35.7	98.55	319.83	852.44	4,506.03	7.25	14.089	5.286	28.98	15.75
30.6	84.79	279.40	835.74	4,057.02	7.05	14.521	4.854	24.94	13.50
25.5	70.92	237.31	815.09	3,561.04	6.78	15.006	4.369	20.86	11.25
20.4	56.95	193.51	788.04	3,010.08	6.40	15.555	3.820	16.75	9.00
15.3	42.87	147.97	749.37	2,394.12	5.88	16.180	3.195	12.61	6.75
18 x 14 x 40.8	105.40	325.45	848.68	4,557.74	7.21	14.005	5.370	31.00	18.00
35.7	92.60	290.32	834.36	4,172.98	7.05	14.374	5.001	27.23	15.75

PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

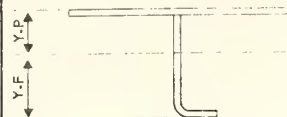
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STEEL

56.1 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 30.6	79.69	253.71	817.31	3,751.19	6.84	14.785	4.590	23.44	13.50
25.5	66.67	215.57	796.16	3,286.70	6.56	15.247	4.128	19.61	11.25
20.4	53.55	175.85	768.35	2,772.58	6.19	15.767	3.608	15.75	9.00
15.3	40.32	134.53	728.56	2,200.19	5.66	16.355	3.020	11.86	6.75
18 x 12 x 40.8	98.60	292.20	827.72	4,184.31	6.99	14.320	5.055	29.00	18.00
35.7	86.65	260.78	813.19	3,825.76	6.82	14.670	4.705	25.48	15.75
30.6	74.59	228.00	795.80	3,433.69	6.61	15.060	4.315	21.94	13.50
25.5	62.42	193.81	774.13	3,003.23	6.33	15.496	3.879	18.36	11.25
20.4	50.15	158.19	745.56	2,528.43	5.95	15.984	3.391	14.75	9.00
15.3	37.77	121.08	704.65	2,001.97	5.43	16.534	2.841	11.11	6.75
18 x 10 x 40.8	91.80	258.91	802.76	3,793.04	6.73	14.650	4.725	27.00	18.00
35.7	80.70	231.20	788.04	3,463.43	6.56	14.980	4.395	23.73	15.75
30.6	69.49	202.26	770.34	3,103.85	6.34	15.346	4.029	20.44	13.50
25.5	58.17	172.04	748.17	2,710.15	6.06	15.753	3.622	17.11	11.25
20.4	46.75	140.52	718.86	2,277.34	5.69	16.207	3.168	13.75	9.00
15.3	35.22	107.64	676.88	1,799.31	5.18	16.717	2.658	10.36	6.75
18 x 8 x 40.8	85.00	225.56	772.54	3,382.63	6.43	14.996	4.379	25.00	18.00
35.7	74.75	201.59	757.69	3,084.99	6.26	15.303	4.072	21.98	15.75
30.6	64.39	176.50	739.73	2,760.92	6.04	15.643	3.732	18.94	13.50
25.5	53.92	150.26	717.14	2,406.98	5.76	16.019	3.356	15.86	11.25
20.4	43.35	122.84	687.16	2,019.03	5.39	16.437	2.938	12.75	9.00
15.3	32.67	94.18	644.23	1,592.07	4.90	16.904	2.471	9.61	6.75
18 x 6 x 40.8	78.20	192.16	735.18	2,951.62	6.09	15.360	4.015	23.00	18.00
35.7	68.80	171.93	720.34	2,689.33	5.91	15.642	3.733	20.23	15.75
30.6	59.29	150.71	702.26	2,404.12	5.69	15.952	3.423	17.44	13.50
25.5	49.67	128.46	679.37	2,093.18	5.42	16.294	3.081	14.61	11.25
20.4	39.95	105.15	648.90	1,753.17	5.06	16.673	2.702	11.75	9.00
15.3	30.12	80.73	605.29	1,380.09	4.59	17.095	2.280	8.86	6.75



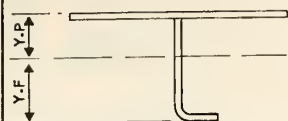
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
30 x 30 x 40.8	200.60	1,087.45	1,912.35	21,837.09	13.14	20.081	11.419	59.00	30.00
35.7	175.90	966.71	1,880.41	20,111.96	12.99	20.804	10.696	51.73	26.25
30.6	151.09	841.96	1,845.62	18,213.06	12.76	21.632	9.868	44.44	22.50
25.5	126.17	713.04	1,806.51	16,104.34	12.41	22.585	8.915	37.11	18.75
20.4	101.15	579.81	1,760.20	13,738.56	11.89	23.695	7.805	29.75	15.00
17.85	88.70	512.08	1,732.86	12,451.05	11.53	24.315	7.185	26.09	13.14
30 x 27 x 40.8	190.40	1,004.96	1,887.79	20,658.65	12.93	20.557	10.943	56.00	30.00
35.7	166.97	893.50	1,855.85	18,998.40	12.76	21.263	10.237	49.11	26.25
30.6	143.44	778.30	1,820.93	17,175.44	12.51	22.068	9.432	42.19	22.50
25.5	119.80	659.24	1,781.49	15,157.15	12.15	22.992	8.508	35.23	18.75
20.4	96.05	536.16	1,734.53	12,901.12	11.61	24.062	7.438	28.25	15.00
17.85	84.23	473.57	1,706.67	11,677.25	11.25	24.658	6.842	24.77	13.14
30 x 24 x 40.8	180.20	922.37	1,859.59	19,421.54	12.70	21.056	10.444	53.00	30.00
35.7	158.05	820.21	1,827.69	17,833.55	12.51	21.743	9.757	46.48	26.25
30.6	135.79	714.60	1,792.66	16,094.36	12.24	22.522	8.978	39.94	22.50
25.5	113.42	605.41	1,752.89	14,174.75	11.85	23.413	8.087	33.36	18.75
20.4	90.95	492.49	1,705.24	12,037.02	11.30	24.441	7.059	26.75	15.00
17.85	79.76	435.05	1,676.83	10,881.10	10.94	25.011	6.489	23.46	13.14
30 x 21 x 40.8	170.00	839.69	1,826.90	18,121.27	12.42	21.581	9.919	50.00	30.00
35.7	149.12	746.86	1,795.07	16,613.79	12.21	22.245	9.255	43.86	26.25
30.6	128.14	650.86	1,759.96	14,967.04	11.93	22.996	8.504	37.69	22.50
25.5	107.05	551.55	1,719.87	13,155.13	11.53	23.851	7.649	31.48	18.75
20.4	85.85	448.81	1,671.51	11,144.97	10.96	24.832	6.668	25.25	15.00
17.85	75.30	396.53	1,642.52	10,061.60	10.59	25.374	6.126	22.15	13.14
30 x 18 x 40.8	159.80	756.91	1,788.54	16,752.89	12.10	22.133	9.367	47.00	30.00
35.7	140.20	673.44	1,756.85	15,335.15	11.88	22.771	8.729	41.23	26.25
30.6	120.49	587.07	1,721.71	13,790.44	11.57	23.490	8.010	35.44	22.50
25.5	100.67	497.67	1,681.32	12,096.13	11.16	24.306	7.194	29.61	18.75
20.4	80.75	405.11	1,632.24	10,223.60	10.58	25.236	6.264	23.75	15.00
17.85	70.83	357.99	1,602.66	9,217.73	10.22	25.748	5.752	20.83	13.14
30 x 15 x 40.8	149.60	674.04	1,742.89	15,310.88	11.72	22.715	8.785	44.00	30.00
35.7	131.27	599.96	1,711.45	13,993.26	11.48	23.324	8.176	38.61	26.25
30.6	112.84	523.24	1,676.36	12,561.26	11.17	24.007	7.493	33.19	22.50
25.5	94.30	443.76	1,635.73	10,995.45	10.75	24.778	6.722	22.73	18.75
20.4	75.65	361.40	1,585.97	9,271.43	10.16	25.654	5.846	22.25	15.00
17.85	66.36	319.44	1,555.79	8,348.37	9.79	26.134	5.366	19.52	13.14
30 x 12 x 40.8	139.40	591.06	1,687.67	13,789.14	11.27	23.329	8.171	41.00	30.00
35.7	122.35	526.40	1,656.63	12,583.29	11.03	23.904	7.596	35.98	26.25
30.6	105.19	459.36	1,621.72	11,275.89	10.70	24.547	6.953	30.94	22.50
25.5	87.92	389.82	1,580.97	9,850.55	10.27	25.269	6.231	25.86	18.75
20.4	70.55	317.68	1,530.61	8,286.90	9.69	26.086	5.414	20.75	15.00
17.85	61.89	280.89	1,499.87	7,452.35	9.32	26.531	4.969	18.20	13.14
30 x 9 x 40.8	129.20	507.99	1,619.51	12,180.87	10.75	23.979	7.521	38.00	30.00
35.7	113.42	452.78	1,589.11	11,099.94	10.49	24.515	6.985	33.36	26.25
30.6	97.54	395.44	1,554.63	9,930.39	10.16	25.112	6.388	28.69	22.50
25.5	81.55	335.86	1,513.98	8,658.72	9.73	25.781	5.719	23.98	18.75
20.4	65.45	273.94	1,463.20	7,268.32	9.15	26.533	4.967	19.25	15.00
17.85	57.43	242.32	1,431.99	6,528.43	8.80	26.941	4.559	16.89	13.14
30 x 6 x 40.8	119.00	424.82	1,533.25	10,478.47	10.11	24.666	6.834	35.00	30.00
35.7	104.50	379.09	1,503.93	9,537.33	9.85	25.158	6.342	30.73	26.25
30.6	89.89	331.47	1,470.29	8,520.45	9.52	25.705	5.795	26.44	22.50
25.5	75.17	281.87	1,430.12	7,417.02	9.10	26.314	5.186	22.11	18.75
20.4	60.35	230.19	1,379.35	6,213.89	8.54	26.995	4.505	17.75	15.00
17.85	52.96	203.75	1,347.88	5,575.29	8.19	27.364	4.136	15.58	13.14
27 x 27 x 40.8	180.20	884.51	1,682.13	16,521.21	11.71	18.678	9.822	53.00	27.00
35.7	158.05	786.44	1,655.05	15,193.77	11.55	19.320	9.180	46.48	23.62



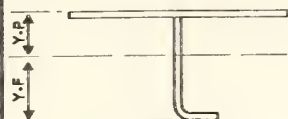
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
27 x 27 x 30.6	135.79	685.03	1,624.95	13,733.68	11.31	20.048	8.452	39.94	20.25
25.5	113.42	580.18	1,590.29	12,115.22	10.96	20.882	7.618	33.36	16.87
20.4	90.95	471.79	1,548.03	10,305.23	10.46	21.843	6.657	26.75	13.50
17.85	79.76	416.67	1,522.48	9,323.48	10.12	22.376	6.124	23.46	11.83
27 x 24 x 40.8	170.00	809.94	1,656.89	15,504.28	11.49	19.143	9.357	50.00	27.00
35.7	149.12	720.25	1,629.69	14,235.63	11.31	19.765	8.735	43.86	23.62
30.6	128.14	627.49	1,599.33	12,844.12	11.05	20.469	8.031	37.69	20.25
25.5	107.05	531.55	1,564.17	11,306.84	10.69	21.271	7.229	31.48	16.87
20.4	85.85	432.34	1,521.06	9,594.50	10.17	22.192	6.308	25.25	13.50
17.85	75.30	381.88	1,494.87	8,668.91	9.83	22.701	5.799	22.15	11.83
27 x 21 x 40.8	159.80	735.27	1,627.48	14,434.08	11.23	19.631	8.869	47.00	27.00
35.7	140.20	653.99	1,600.18	13,231.23	11.03	20.231	8.269	41.23	23.62
30.6	120.49	569.90	1,569.56	11,915.67	10.76	20.908	7.592	35.44	20.25
25.5	100.67	482.89	1,533.90	10,467.23	10.38	21.676	6.824	29.61	16.87
20.4	80.75	392.87	1,489.87	8,860.40	9.85	22.553	5.947	23.75	13.50
17.85	70.83	347.07	1,463.01	7,994.87	9.51	23.035	5.465	20.83	11.83
27 x 18 x 40.8	149.60	660.50	1,592.76	13,306.30	10.92	20.146	8.354	44.00	27.00
35.7	131.27	587.67	1,565.41	12,177.15	10.71	20.721	7.779	38.61	23.62
30.6	112.84	512.27	1,534.55	10,945.73	10.43	21.367	7.133	33.19	20.25
25.5	94.30	434.21	1,498.37	9,594.57	10.04	22.097	6.403	27.73	16.87
20.4	75.65	353.39	1,453.41	8,101.77	9.50	22.926	5.574	22.25	13.50
17.85	66.36	312.25	1,425.83	7,300.47	9.16	23.380	5.120	19.52	11.83
27 x 15 x 40.8	139.40	585.64	1,551.16	12,116.17	10.57	20.689	7.811	41.00	27.00
35.7	122.35	521.28	1,523.82	11,069.60	10.34	21.236	7.264	35.98	23.62
30.6	105.19	454.59	1,492.77	9,931.45	10.04	21.847	6.653	30.94	20.25
25.5	87.92	385.50	1,456.10	8,686.86	9.65	22.534	5.966	25.86	16.87
20.4	70.55	313.90	1,410.19	7,317.35	9.11	23.311	5.189	20.75	13.50
17.85	61.89	277.43	1,381.89	6,584.78	8.77	23.735	4.765	18.20	11.83
27 x 12 x 40.8	129.20	510.67	1,500.40	10,858.37	10.15	21.263	7.237	38.00	27.00
35.7	113.42	454.81	1,473.19	9,904.40	9.91	21.777	6.723	33.36	23.62
30.6	97.54	396.87	1,442.05	8,869.73	9.60	22.349	6.151	28.69	20.25
25.5	81.55	336.76	1,404.97	7,741.94	9.20	22.990	5.510	23.98	16.87
20.4	65.45	274.39	1,358.16	6,505.81	8.66	23.710	4.790	19.25	13.50
17.85	57.43	242.59	1,329.15	5,846.80	8.32	24.101	4.399	16.89	11.83
27 x 9 x 40.8	119.00	435.60	1,437.10	9,526.95	9.64	21.871	6.629	35.00	27.00
35.7	104.50	388.28	1,410.23	8,676.95	9.40	22.347	6.153	30.73	23.62
30.6	89.89	339.10	1,379.19	7,757.15	9.09	22.876	5.624	26.44	20.25
25.5	75.17	287.99	1,341.86	6,757.49	8.68	23.464	5.036	22.11	16.87
20.4	60.35	234.87	1,294.31	5,665.71	8.15	24.123	4.377	17.75	13.50
17.85	52.96	207.75	1,264.68	5,085.48	7.82	24.479	4.021	15.58	11.83
27 x 6 x 40.8	108.80	360.44	1,355.95	8,115.27	9.03	22.515	5.985	32.00	27.00
35.7	95.57	321.68	1,329.79	7,382.10	8.79	22.949	5.551	28.11	23.62
30.6	82.24	281.29	1,299.21	6,589.97	8.48	23.428	5.072	24.19	20.25
25.5	68.80	239.20	1,262.01	5,730.95	8.08	23.959	4.541	20.23	16.87
20.4	55.25	195.33	1,214.11	4,795.51	7.57	24.550	3.950	16.25	13.50
17.85	48.49	172.90	1,184.07	4,299.69	7.25	24.869	3.631	14.26	11.83
24 x 24 x 40.8	159.80	701.64	1,455.94	12,073.49	10.27	17.207	8.293	47.00	24.00
35.7	140.20	624.04	1,432.99	11,085.54	10.10	17.764	7.736	41.23	21.00
30.6	120.49	543.72	1,406.86	10,000.07	9.86	18.392	7.108	35.44	18.00
25.5	100.67	460.60	1,375.89	8,799.58	9.52	19.104	6.396	29.61	15.00
20.4	80.75	374.62	1,336.94	7,461.88	9.04	19.919	5.581	23.75	12.00
17.85	70.83	330.88	1,312.81	6,738.99	8.73	20.367	5.133	20.83	10.51
24 x 22 x 40.8	153.00	657.27	1,438.94	11,505.12	10.11	17.504	7.996	45.00	24.00
35.7	134.25	584.65	1,415.82	10,551.47	9.93	18.047	7.453	39.48	21.00
30.6	115.39	509.47	1,389.41	9,505.89	9.68	18.658	6.842	33.94	18.00
25.5	96.42	431.66	1,357.99	8,352.36	9.33	19.349	6.151	28.36	15.00



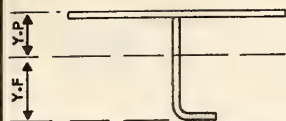
PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
24 x 22 x 20.4	77.35	351.14	1,318.33	7,070.72	8.85	20.137	5.363	22.75	12.00
17.85	67.85	310.17	1,293.70	6,379.82	8.54	20.569	4.931	19.96	10.51
24 x 20 x 40.8	146.20	612.85	1,419.94	10,916.19	9.94	17.812	7.688	43.00	24.00
35.7	128.30	545.23	1,396.66	9,999.64	9.75	18.340	7.160	37.73	21.00
30.6	110.29	475.20	1,369.96	8,996.87	9.49	18.933	6.567	32.44	18.00
25.5	92.17	402.70	1,338.08	7,893.32	9.13	19.601	5.899	27.11	15.00
20.4	73.95	327.65	1,297.67	6,670.79	8.65	20.359	5.141	21.75	12.00
17.85	64.87	289.46	1,272.53	6,013.38	8.33	20.774	4.726	19.08	10.51
24 x 18 x 40.8	139.40	568.38	1,398.56	10,305.55	9.75	18.131	7.369	41.00	24.00
35.7	122.35	505.77	1,375.12	9,429.15	9.55	18.643	6.857	35.98	21.00
30.6	105.19	440.91	1,348.14	8,472.34	9.28	19.216	6.284	30.94	18.00
25.5	87.92	373.73	1,315.79	7,422.00	8.92	19.859	5.641	25.86	15.00
20.4	70.55	304.16	1,274.61	6,261.80	8.42	20.587	4.913	20.75	12.00
17.85	61.89	268.74	1,248.93	5,639.45	8.11	20.985	4.515	18.20	10.51
24 x 16 x 40.8	132.60	523.87	1,374.34	9,671.97	9.53	18.462	7.038	39.00	24.00
35.7	116.40	466.29	1,350.75	8,839.04	9.32	18.956	6.544	34.23	21.00
30.6	100.09	406.60	1,323.49	7,931.58	9.05	19.507	5.993	29.44	18.00
25.5	83.67	344.75	1,290.66	6,937.88	8.68	20.125	5.375	24.61	15.00
20.4	67.15	280.66	1,248.70	5,843.43	8.18	20.820	4.680	19.75	12.00
17.85	58.92	248.02	1,222.46	5,257.79	7.87	21.199	4.301	17.33	10.51
24 x 14 x 40.8	125.80	479.32	1,346.65	9,014.16	9.29	18.806	6.694	37.00	24.00
35.7	110.45	426.77	1,322.95	8,228.27	9.07	19.280	6.220	32.48	21.00
30.6	94.99	372.27	1,295.42	7,373.83	8.79	19.808	5.692	27.94	18.00
25.5	79.42	315.75	1,262.11	6,440.44	8.42	20.397	5.103	23.36	15.00
20.4	63.75	257.15	1,219.37	5,415.37	7.92	21.059	4.441	18.75	12.00
17.85	55.94	227.29	1,192.57	4,868.17	7.61	21.418	4.082	16.45	10.51
24 x 12 x 40.8	119.00	434.72	1,314.70	8,330.68	9.02	19.163	6.337	35.00	24.00
35.7	104.50	387.22	1,290.92	7,595.75	8.79	19.616	5.884	30.73	21.00
30.6	89.89	337.92	1,263.17	6,798.27	8.51	20.118	5.382	26.44	18.00
25.5	75.17	286.75	1,229.41	5,929.13	8.13	20.677	4.823	22.11	15.00
20.4	60.35	233.64	1,185.90	4,977.26	7.64	21.303	4.197	17.75	12.00
17.85	52.96	206.56	1,158.55	4,470.34	7.34	21.641	3.859	15.58	10.51
24 x 10 x 40.8	112.20	390.07	1,277.42	7,620.00	8.71	19.535	5.965	33.00	24.00
35.7	98.55	347.64	1,253.64	6,940.28	8.48	19.964	5.536	28.98	21.00
30.6	84.79	303.55	1,225.72	6,204.02	8.19	20.438	5.062	24.94	18.00
25.5	70.92	257.73	1,191.57	5,403.35	7.82	20.965	4.535	20.86	15.00
20.4	56.95	210.12	1,147.35	4,528.75	7.33	21.553	3.947	16.75	12.00
17.85	49.98	185.83	1,119.49	4,064.03	7.03	21.870	3.630	14.70	10.51
24 x 8 x 40.8	105.40	345.38	1,233.35	6,880.47	8.36	19.921	5.579	31.00	24.00
35.7	92.60	308.03	1,209.68	6,260.61	8.13	20.325	5.175	27.23	21.00
30.6	79.69	269.15	1,181.70	5,590.18	7.84	20.769	4.731	23.44	18.00
25.5	66.67	228.70	1,147.28	4,862.48	7.47	21.262	4.238	19.61	15.00
20.4	53.55	186.60	1,102.46	4,069.46	6.99	21.809	3.691	15.75	12.00
17.85	47.00	165.09	1,074.16	3,648.96	6.70	22.103	3.397	13.82	10.51
24 x 6 x 40.8	98.60	300.65	1,180.47	6,110.30	7.96	21.324	5.176	29.00	24.00
35.7	86.65	268.39	1,157.09	5,555.35	7.73	20.699	4.801	25.48	21.00
30.6	74.59	234.74	1,129.24	4,955.75	7.44	21.111	4.389	21.94	18.00
25.5	62.42	199.65	1,094.73	4,305.87	7.08	21.567	3.933	18.36	15.00
20.4	50.15	163.07	1,049.54	3,599.01	6.61	22.071	3.429	14.75	12.00
17.85	44.02	144.35	1,020.93	3,224.86	6.33	22.341	3.159	12.95	10.51
21 x 20 x 40.8	136.00	519.66	1,224.86	8,209.43	8.74	15.798	6.702	40.00	21.00
35.7	119.37	462.47	1,205.19	7,519.93	8.56	16.260	6.240	35.11	18.37
30.6	102.64	403.18	1,182.09	6,764.36	8.32	16.778	5.722	30.19	15.75
25.5	85.80	341.73	1,153.82	5,932.07	8.00	17.359	5.141	25.23	13.12
20.4	68.85	278.09	1,117.06	5,009.86	7.56	18.015	4.485	20.25	10.50
17.85	60.40	245.69	1,093.79	4,514.13	7.28	18.373	4.127	17.77	9.20

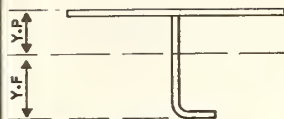


PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

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61.2 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
21 x 18 x 40.8	129.20	480.64	1,205.86	7,732.36	8.56	16.088	6.412	38.00	21.00
35.7	113.42	427.83	1,185.92	7,074.08	8.37	16.535	5.965	33.36	18.37
30.6	97.54	373.06	1,162.42	6,354.42	8.13	17.033	5.467	28.69	15.75
25.5	81.55	316.28	1,133.55	5,563.85	7.80	17.592	4.908	23.98	13.12
20.4	65.45	257.44	1,095.92	4,690.60	7.35	18.220	4.280	19.25	10.50
17.85	57.43	227.48	1,072.06	4,222.42	7.07	18.561	3.939	16.89	9.20
21 x 16 x 40.8	122.40	441.57	1,184.21	7,236.85	8.36	16.389	6.111	36.00	21.00
35.7	107.47	393.15	1,164.00	6,612.49	8.17	16.819	5.681	31.61	18.37
30.6	92.44	342.91	1,140.09	5,931.50	7.91	17.297	5.203	27.19	15.75
25.5	77.30	290.81	1,110.81	5,185.43	7.58	17.831	4.669	22.73	13.12
20.4	62.05	236.79	1,072.07	4,363.90	7.13	18.429	4.071	18.25	10.50
17.85	54.45	209.27	1,047.62	3,924.59	6.86	18.754	3.746	16.01	9.20
21 x 14 x 40.8	115.60	402.46	1,159.33	6,721.82	8.14	16.702	5.798	34.00	21.00
35.7	101.52	358.45	1,138.85	6,134.30	7.94	17.114	5.386	29.86	18.37
30.6	87.34	312.75	1,114.54	5,494.97	7.68	17.570	4.930	25.69	15.75
25.5	73.05	265.33	1,084.44	4,796.37	7.34	18.077	4.423	21.48	13.12
20.4	58.65	216.13	1,044.99	4,029.49	6.90	18.644	3.856	17.25	10.50
17.85	51.47	191.05	1,019.92	3,620.45	6.62	18.950	3.550	15.14	9.20
21 x 12 x 40.8	108.80	363.30	1,130.42	6,186.09	7.88	17.028	5.472	32.00	21.00
35.7	95.57	323.71	1,109.71	5,638.62	7.68	17.419	5.081	28.11	18.37
30.6	82.24	282.57	1,085.01	5,044.16	7.42	17.851	4.649	24.19	15.75
25.5	68.80	239.84	1,054.31	4,396.24	7.08	18.330	4.170	20.23	13.12
20.4	55.25	195.46	1,013.94	3,687.09	6.64	18.864	3.636	16.25	10.50
17.85	48.49	172.83	988.28	3,309.79	6.36	19.151	3.349	14.26	9.20
21 x 10 x 40.8	102.00	324.09	1,096.44	5,628.39	7.60	17.367	5.133	30.00	21.00
35.7	89.62	288.94	1,075.54	5,124.46	7.39	17.735	4.765	26.36	18.37
30.6	77.14	252.37	1,050.49	4,578.35	7.12	18.142	4.358	22.69	15.75
25.5	64.55	214.33	1,019.23	3,984.53	6.79	18.591	3.909	18.98	13.12
20.4	51.85	174.79	978.01	3,336.41	6.35	19.089	3.411	15.25	10.50
17.85	45.51	154.60	951.78	2,992.40	6.08	19.356	3.144	13.39	9.20
21 x 8 x 40.8	95.20	284.84	1,055.91	5,047.34	7.27	17.720	4.780	28.00	21.00
35.7	83.67	254.14	1,034.91	4,590.77	7.06	18.064	4.436	24.61	18.37
30.6	72.04	222.14	1,009.61	4,096.79	6.80	18.442	4.058	21.19	15.75
25.5	60.30	188.81	977.88	3,560.76	6.46	18.859	3.641	17.73	13.12
20.4	48.45	154.11	935.92	2,977.16	6.03	19.319	3.181	14.25	10.50
17.85	42.53	136.37	909.21	2,668.06	5.77	19.566	2.934	12.51	9.20
21 x 6 x 40.8	88.40	245.54	1,006.73	4,441.44	6.89	18.088	4.412	26.00	21.00
35.7	77.72	219.30	985.81	4,036.40	6.68	18.405	4.095	22.86	18.37
30.6	66.94	191.90	960.42	3,598.66	6.42	18.753	3.747	19.69	15.75
25.5	56.05	163.28	928.41	3,124.36	6.10	19.135	3.365	16.48	13.12
20.4	45.05	133.42	885.95	2,609.01	5.68	19.555	2.945	13.25	10.50
17.85	39.56	118.13	858.92	2,336.54	5.43	19.780	2.720	11.63	9.20
18 x 18 x 40.8	119.00	397.36	1,014.60	5,567.90	7.37	14.012	5.488	35.00	18.00
35.7	104.50	353.91	997.76	5,094.28	7.20	14.394	5.106	30.73	15.75
30.6	89.89	308.77	977.41	4,575.56	6.98	14.819	4.681	26.44	13.50
25.5	75.17	261.91	951.75	4,005.06	6.69	15.292	4.208	22.11	11.25
20.4	60.35	213.29	917.53	3,374.66	6.29	15.822	3.678	17.75	9.00
15.3	45.42	162.88	867.99	2,674.38	5.75	16.419	3.081	13.36	6.75
18 x 16 x 40.8	112.20	363.79	995.48	5,195.31	7.19	14.281	5.219	33.00	18.00
35.7	98.55	324.09	978.27	4,747.10	7.01	14.647	4.853	28.98	15.75
30.6	84.79	282.83	957.39	4,257.48	6.79	15.053	4.447	24.94	13.50
25.5	70.92	239.98	931.03	3,720.57	6.49	15.504	3.996	20.86	11.25
20.4	56.95	195.50	895.83	3,129.27	6.09	16.007	3.493	16.75	9.00
15.3	42.87	149.35	844.93	2,474.93	5.56	16.571	2.929	12.61	6.75
18 x 14 x 40.8	105.40	330.17	973.38	4,807.59	6.99	14.561	4.939	31.00	18.00
35.7	92.60	294.24	955.78	4,387.10	6.81	14.910	4.590	27.23	15.75



PROPERTIES OF COMBINED BEAM AND PLATE FLANGED PLATE

30t

STEEL

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS	
		LESSER	GREATER					AREA	SHEAR AREA
IN. x IN. x LBS./FT. ²	LBS.	IN. ³	IN. ³	IN. ⁴	IN.	IN.	IN.	IN. ²	IN. ²
18 x 14 x 30.6	79.69	256.87	934.38	3,928.91	6.57	15.295	4.205	23.44	13.50
25.5	66.67	218.04	907.29	3,427.92	6.27	15.722	3.778	19.61	11.25
20.4	53.55	177.70	871.10	2,877.99	5.88	16.196	3.304	15.75	9.00
15.3	40.32	135.82	818.83	2,271.71	5.35	16.726	2.774	11.86	6.75
18 x 12 x 40.8	98.60	296.51	947.53	4,403.81	6.76	14.852	4.648	29.00	18.00
35.7	86.65	264.36	929.56	4,013.55	6.57	15.182	4.318	25.48	15.75
30.6	74.59	230.89	907.63	3,589.33	6.34	15.545	3.955	21.94	13.50
25.5	62.42	196.08	879.82	3,126.75	6.03	15.946	3.554	18.36	11.25
20.4	50.15	159.89	842.64	2,620.60	5.64	16.390	3.110	14.75	9.00
15.3	37.77	122.29	789.06	2,064.61	5.12	16.883	2.617	11.11	6.75
18 x 10 x 40.8	91.80	262.80	916.90	3,982.95	6.49	15.156	4.344	27.00	18.00
35.7	80.70	234.44	898.59	3,625.67	6.30	15.465	4.035	23.73	15.75
30.6	69.49	204.89	876.16	3,238.16	6.07	15.804	3.696	20.44	13.50
25.5	58.17	174.12	847.66	2,816.68	5.77	16.177	3.323	17.11	11.25
20.4	46.75	142.08	809.55	2,356.87	5.39	16.589	2.911	13.75	9.00
15.3	35.22	108.75	754.78	1,853.52	4.88	17.044	2.456	10.36	6.75
18 x 8 x 40.8	85.00	229.04	880.03	3,543.89	6.19	15.473	4.027	25.00	18.00
35.7	74.75	204.49	861.44	3,222.63	6.00	15.759	3.741	21.98	15.75
30.6	64.39	178.87	838.60	2,874.80	5.77	16.072	3.428	18.94	13.50
25.5	53.92	152.14	809.51	2,497.32	5.47	16.415	3.085	15.86	11.25
20.4	43.35	124.26	770.59	2,086.58	5.10	16.792	2.708	12.75	9.00
15.3	32.67	95.21	714.88	1,638.32	4.61	17.208	2.292	9.61	6.75
18 x 6 x 40.8	78.20	195.23	834.77	3,085.44	5.84	15.804	3.696	23.00	18.00
35.7	68.80	174.51	816.07	2,803.52	5.65	16.065	3.435	20.23	15.75
30.6	59.29	152.83	792.99	2,498.61	5.42	16.349	3.151	17.44	13.50
25.5	49.67	130.14	763.50	2,168.23	5.14	16.660	2.840	14.61	11.25
20.4	39.95	106.43	724.07	1,809.46	4.78	17.001	2.499	11.75	9.00
15.3	30.12	81.66	667.85	1,418.90	4.31	17.375	2.125	8.86	6.75

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